

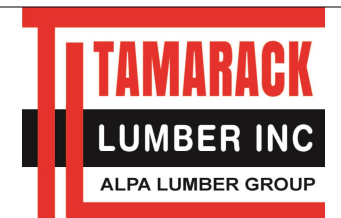
Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	5
J2	12-00-00	9 1/2" NI-40x	1	36
J3	6-00-00	9 1/2" NI-40x	1	10
J4	18-00-00	9 1/2" NI-80	1	52
B10	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B13	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B50	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B7 DR	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B11	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B14	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B8 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B9	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
24	H1	IUS2.56/9.5
11	H2	IUS3.56/9.5
2	H4C	HUC410
3	H4	HGUS410

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



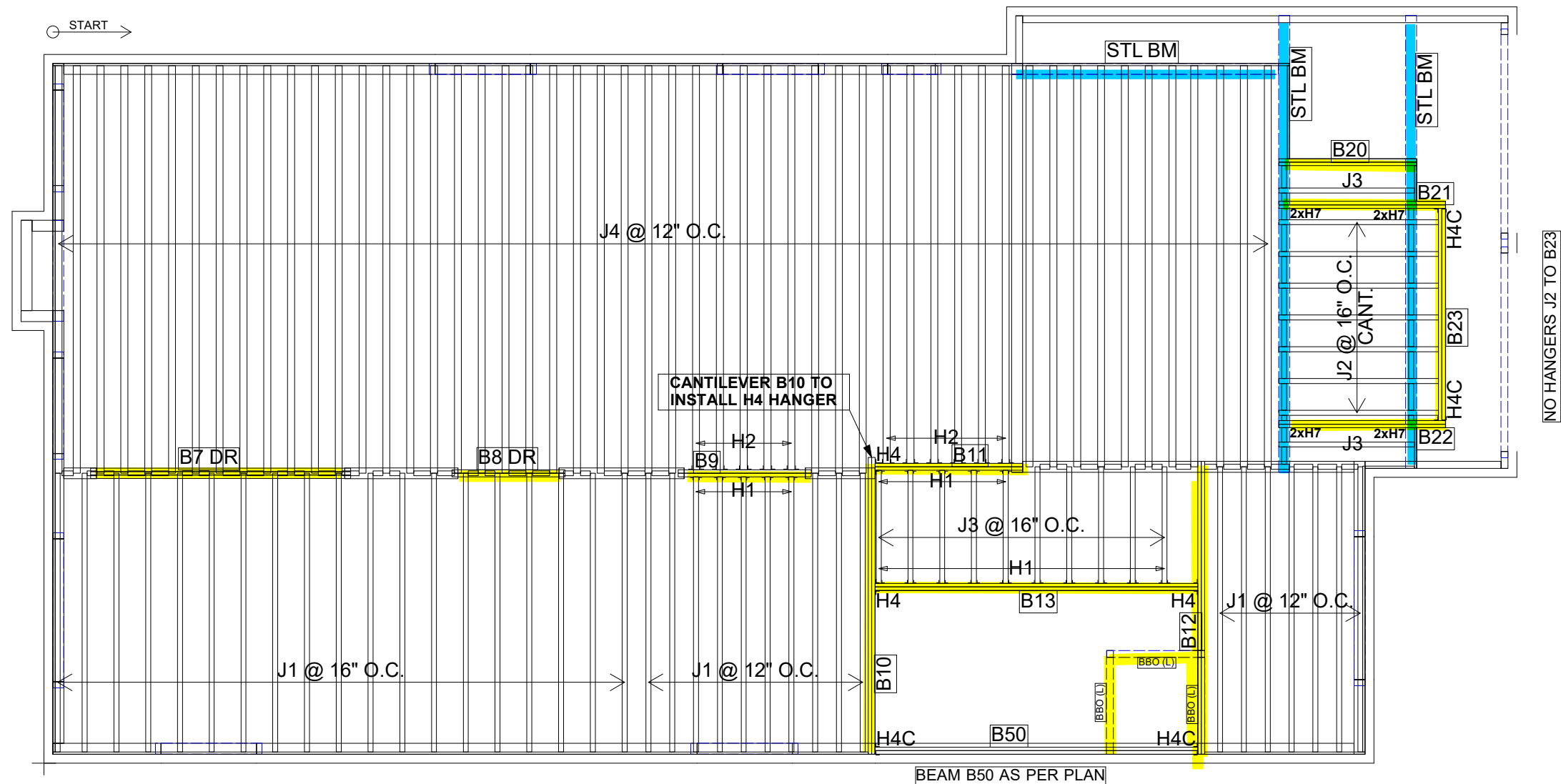
FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-19
ELEVATION: A
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE **MANUFACTURER SPECIFIED FASTENERS**.
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER** **MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480
SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	36
J2	8-00-00	9 1/2" NI-40x	1	7
J3	6-00-00	9 1/2" NI-40x	1	12
J4	18-00-00	9 1/2" NI-80	1	52
B10	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B13	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B50	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B7 DR	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B23	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B11	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B21	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B22	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B20	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B8 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B9	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
20	H1	IUS2.56/9.5
11	H2	IUS3.56/9.5
4	H4C	HUC410
3	H4	HGUS410
8	H7	H3 (TIEDOWN)*

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-19
ELEVATION: B
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

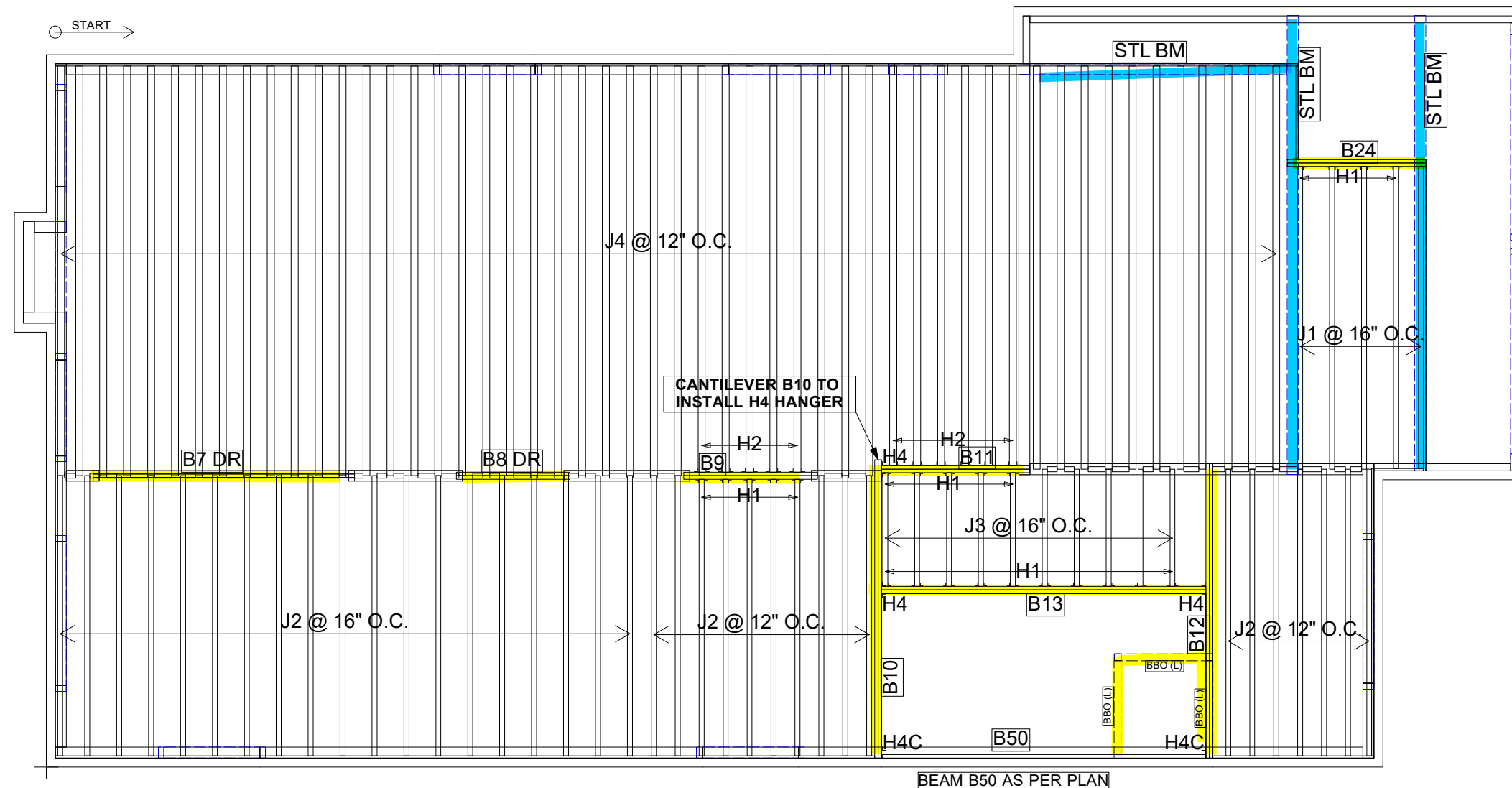
REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE **MANUFACTURER SPECIFIED FASTENERS**.
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER** **MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED



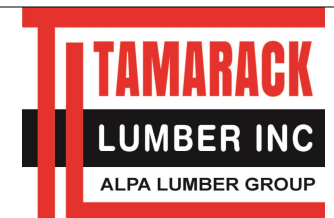
Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	5
J2	12-00-00	9 1/2" NI-40x	1	36
J3	6-00-00	9 1/2" NI-40x	1	10
J4	18-00-00	9 1/2" NI-80	1	52
B10	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B13	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B50	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B7 DR	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B11	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B24	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B8 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B9	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
24	H1	IUS2.56/9.5
11	H2	IUS3.56/9.5
2	H4C	HUC410
3	H4	HGUS410

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



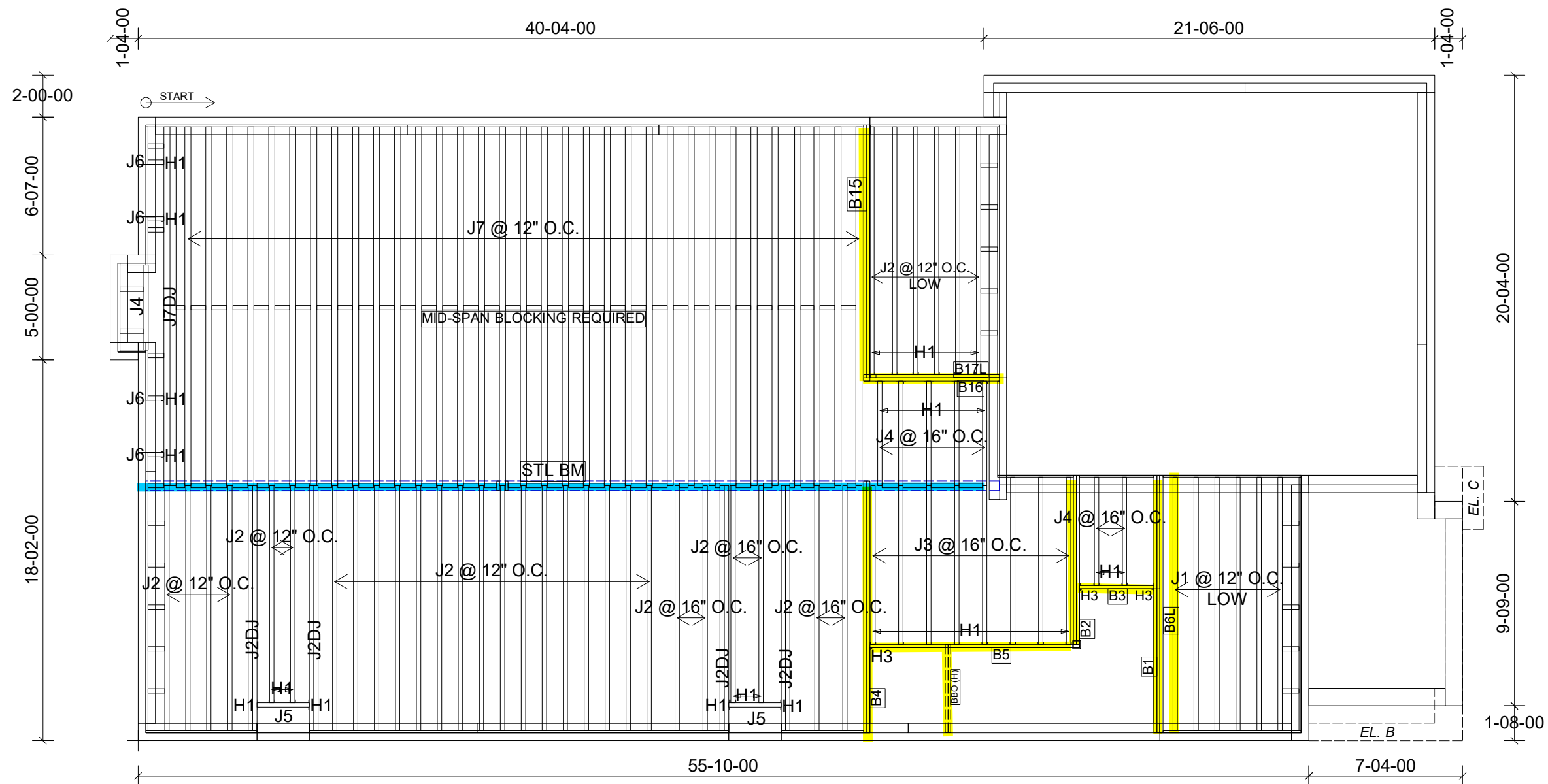
FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-19
ELEVATION: C
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE **MANUFACTURER SPECIFIED FASTENERS**.
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER** **MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480
SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	6
J2	12-00-00	9 1/2" NI-40x	1	34
J2DJ	12-00-00	9 1/2" NI-40x	2	8
J3	8-00-00	9 1/2" NI-40x	1	8
J4	6-00-00	9 1/2" NI-40x	1	8
J5	4-00-00	9 1/2" NI-40x	1	2
J6	2-00-00	9 1/2" NI-40x	1	4
J7	18-00-00	9 1/2" NI-80	1	33
J7DJ	18-00-00	9 1/2" NI-80	2	2
B6L	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B1	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B15	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B4	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B5	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B2	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B16	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B17L	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B3	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
21	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H3	HUS1.81/10

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING
SUNKEN OPTION



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-19
ELEVATION: A / B / C
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

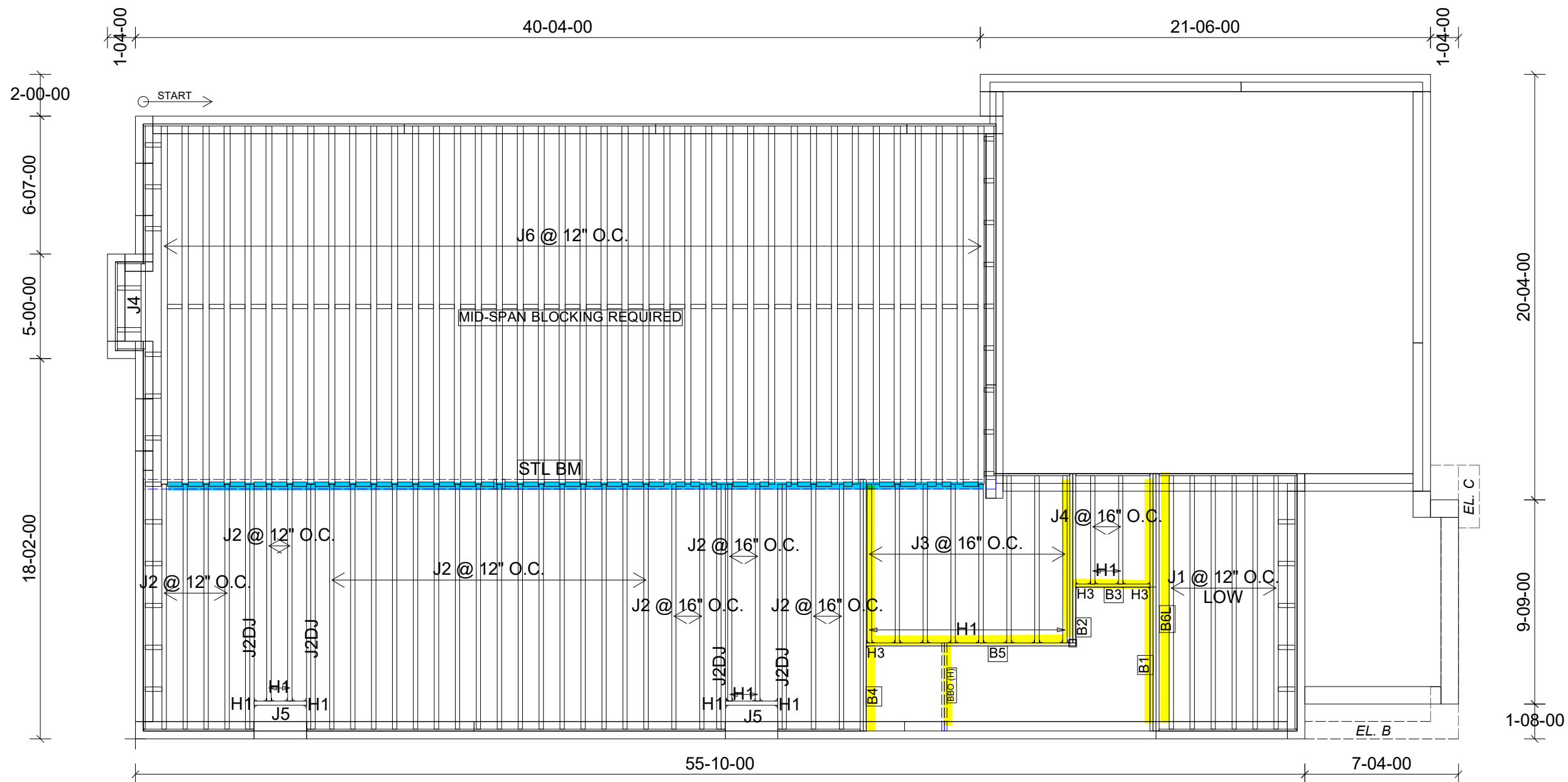
REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE MANUFACTURER **SPECIFIED FASTENERS**.
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER** **MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED



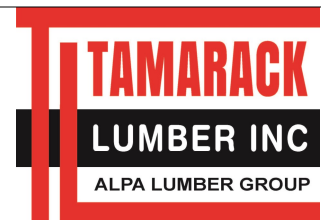
Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	6
J2	12-00-00	9 1/2" NI-40x	1	28
J2DJ	12-00-00	9 1/2" NI-40x	2	8
J3	8-00-00	9 1/2" NI-40x	1	8
J4	6-00-00	9 1/2" NI-40x	1	3
J5	4-00-00	9 1/2" NI-40x	1	2
J6	18-00-00	9 1/2" NI-80	1	40
B6L	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B1	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B4	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B5	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B2	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B3	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
10	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H3	HUS1.81/10

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING
WOD / WOB CONDITION



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-19
ELEVATION: A / B / C
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

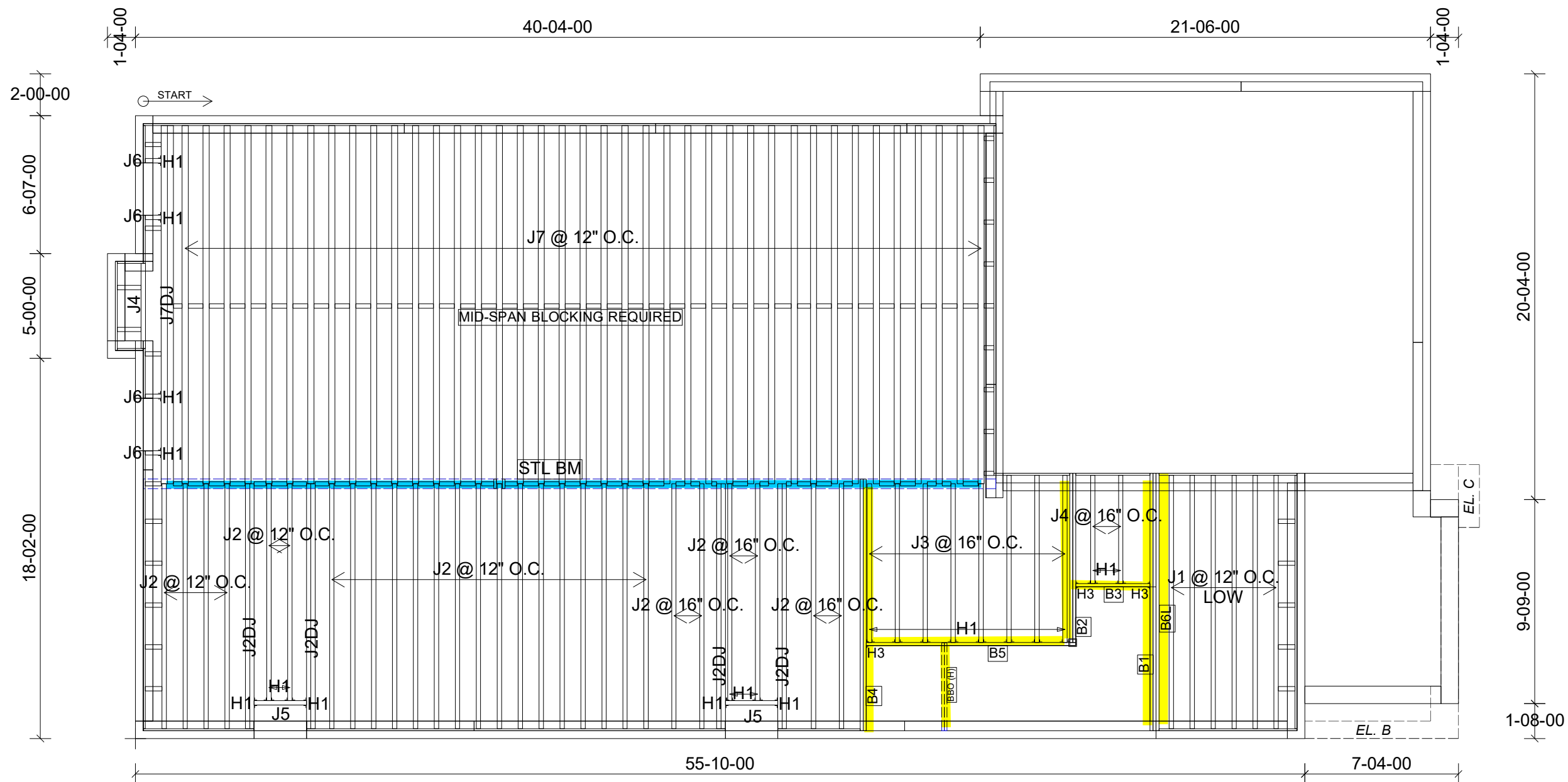
REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE **MANUFACTURER SPECIFIED FASTENERS**.
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER** MUST BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	6
J2	12-00-00	9 1/2" NI-40x	1	28
J2DJ	12-00-00	9 1/2" NI-40x	2	8
J3	8-00-00	9 1/2" NI-40x	1	8
J4	6-00-00	9 1/2" NI-40x	1	3
J5	4-00-00	9 1/2" NI-40x	1	2
J6	2-00-00	9 1/2" NI-40x	1	4
J7	18-00-00	9 1/2" NI-80	1	39
J7DJ	18-00-00	9 1/2" NI-80	2	2
B6L	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B1	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B4	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B5	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B2	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B3	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
10	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H3	HUS1.81/10

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-19
ELEVATION: A / B / C
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL CONNECTORS MUST BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS USING THE MANUFACTURER SPECIFIED FASTENERS.
ALL BEAM HANGER FASTENERS INSTALLED INTO THE SUPPORTING MEMBER MUST BE A MINIMUM OF 3.5" IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED

NORDIC

INSTALLATION GUIDE NORDIC JOIST

NS-G133 
ENGLISH
VERSION
2020-10-01

Engineered Wood Products

BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



NORDIC
STRUCTURES

nordic.ca

INSTALLING NORDIC I-JOISTS

1. Installation of Nordic I-joists shall be as shown in details 1.
2. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
5. I-joists must be protected from the weather prior to installation.
6. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 15 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
7. End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches.
8. Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.
9. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
10. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the maximum vertical load using a single I-joist is 3,300 plf, and 6,000 plf if double I-joists are used.
11. Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, or 5.
12. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-GT3).
13. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see APA Technical Note: Temporary Construction Loads over I-Joist Roofs and Floors, Form J735.

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

SAFETY AND CONSTRUCTION PRECAUTIONS

I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
 2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2-inch nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
 3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
 4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
 5. Never install a damaged I-joist.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



Never stack building materials over unsheathed I-joists. Once sheathed, do not overstress I-joist with concentrated loads from building materials.

NORDIC I-JOIST SERIES

RESIDENTIAL SERIES

NI-20
2x3 S-P-F No. 2
3/8 in. web
Depths
9-1/2 and 11-7/8 in.
33 pieces per unit

NI-40x
2x3 1950F MSR
3/8 in. web
Depths
9-1/2, 11-7/8 and 14 in.
33 pieces per unit

NI-60
2x3 2100F MSR
3/8 in. web
Depths
9-1/2, 11-7/8, 14 and 16 in.
33 pieces per unit

NI-80
2x4 2100F MSR
3/8 in. web
Depths
9-1/2, 11-7/8, 14 and 16 in.
23 pieces per unit

NI-90
2x4 2400F MSR
3/8 in. web
Depths
11-7/8, 14 and 16 in.
23 pieces per unit

RIM BOARDS
Width Length
1-1/8 in. 16 ft
Depths
9-1/2 to 16 in.
APA Rim Board Plus

WEB STIFFENERS

2 Concentrated Load (Load Stiffener)

Tight joint, no gap

End Bearing (Bearing Stiffener)

Gap

Tight joint, no gap

Flange width 2-1/2" or 3-1/2"

Approx. 2"

1/8"-1/4" Gap

Four 2-1/2" nails, 3" nails required for I-joists with 3-1/2" flange width

No gap

Approx. 2"

Stiffener Size Requirements

Flange width (in.)	Web stiffener size each side of web (in.)
2-1/2	1 x 2-5/16 Minimum width
3-1/2	1-1/2 x 2-5/16 Minimum width

NAIL SPACING

Nailing into flange face

Nailing into flange edge

Nailed to Only One Flange Edge (Top View)

Closest nail spacing

Nailed to Both Flange Edges (Top View)

Closest nail spacing

1/2 offset spacing ^(a)

Recommended Closest Nail Spacing for Fastening Sheathing to I-joist Flanges to Minimize Splitting

Fastener size (diameter x length)	Flange face nailing ^(a)			Flange edge nailing ^(a)		
	End distance (in.)	Nail spacing (in.)	End distance (in.)	Nail spacing (in.)	Nail spacing (in.)	
0.128" or smaller in diameter, and 3-1/4" or shorter in length	2	2	2	2	4	
Greater than 0.128" up to 0.148" in diameter, and 3-1/4" or shorter in length	2	3	2	3	6	

^(a) If more than one row is required, offset rows a minimum of 1/2 inch and stagger.

^(b) Closest nail spacing measured from one flange edge. Nails on opposite flange edge must be offset one-half the minimum spacing.

1a Nordic I-joist blocking panel

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for floor sheathing)

Attach I-joist to top plate per detail 1b

1b Rim board

One 2-1/2" nail at top and bottom flange

Attach rim board to top plate using 2-1/2" toe-nails at 6" o.c.

One 2-1/2" face nail at each side at bearing

Note:
1. To avoid splitting flange, start nails at least 1-1/2 inch from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

1g Load-bearing wall above shall align vertically with the wall below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking panel required over all interior supports under load-bearing walls or when floor joists are not continuous over support. The NBC requires blocking at load-bearing and non-load-bearing walls constructed with required braced wall panels (shearwalls).

Joist attachment per detail 1b

2-1/2" nails at 6" o.c. to top plate

Nordic I-joist blocking panel per detail 1a

Notes:
1. An occasional blocking panel (one per line of blocking) may be left out for the passage of plumbing or ventilation ducts. For other applications, contact Nordic Structures.
2. For other options, see details 1g-1 to 1g-5.

1h Use backer block if hanger load exceeds 360 lbf. Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer block tight to top flange. Use twelve 3" nails, clinched when possible. Maximum resistance for hanger for this detail is 1,620 lbf.

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

Backer block required:
- Only on the loaded side for top-mount hangers
- On both sides for face-mount hangers

Flange width (in.)	Material thickness required (in.) ^(a)	Minimum depth (in.) ^(b)
2-1/2	1	5-1/2
3-1/2	1-1/2	7-1/4

^(a) Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 Standard.

^(b) For face-mount hangers use net joist depth minus 3-1/4 inches for joists with 1-1/2-inch-thick flanges.

Notes:
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
2. For hanger resistance, see manufacturer's recommendations.
3. Verify double I-joist resistance to support concentrated loads.
4. Backer blocks must be long enough to permit required nailing without splitting.

1j Top- or face-mount hanger installed per manufacturer's recommendations

1k Top-mount hanger installed per manufacturer's recommendations

2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam.

1l Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify header resistance to support concentrated loads.

Backer block per detail 1h

Filler block per detail 1p

Note:
1. See detail 1h for maximum support resistance.

1m Do not bevel-out I-joist beyond inside face of wall

Attach I-joist per detail 1b

Note:
1. Blocking required at bearing for lateral support, not shown for clarity.

1p Filler block

Offset nails from opposite face by 6"

1/8" to 1/4" gap between top flange and filler block

Notes:
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8-inch to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. For flange width of 2-1/2 inches, nail joists together with two rows of 3-inch nails at 12 inches o.c. (clinched when possible) on each side of the double I-joist (total of four nails per foot). For flange width of 3-1/2 inches, use two rows of 3-inch nails at 6 inches o.c. on each side of the double I-joist (total of eight nails per foot).
5. The maximum factored load may be applied to one side of the double I-joist using this detail is 860 dBf.

Filler Block Requirements for Double I-joist Construction

Flange width (in.)	Net depth (in.)	Filler block size (in.)	Example
2-1/2	9-1/2	2-1/8 to 2-1/4 x 6	2x8 x 5/8" or 3/4" sheathing
	11-7/8	2-1/8 to 2-1/4 x 8	2x8 x 5/8" or 3/4" sheathing
	14	2-1/8 to 2-1/4 x 10	2x10 x 5/8" or 3/4" sheathing
3-1/2	9-1/2	2-1/8 to 2-1/4 x 12	2x12 x 5/8" or 3/4" sheathing
	11-7/8	3 x 6	2 x 2x6
	14	3 x 8	2 x 2x8
	16	3 x 10	2 x 2x10
	18	3 x 12	2 x 2x12

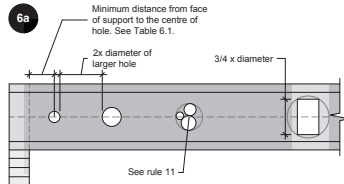
Note:
1. The height of the filler block may be different from that specified in the table, as long as it allows nailing and respects the required gap.

WEB HOLES AND OPENINGS

WEB HOLES IN I-JOISTS

Rules for Cutting Holes in I-Joists

1. The distance between the inside edge of the support and the centreline of any hole shall be in compliance with the requirements of Table 6.1.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. Whenever possible, field-cut holes should be centred on the middle of the web.
4. The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole - or twice the length of the longest side of the longest rectangular hole - and each hole must be sized and located in compliance with the requirements of Table 6.1.
7. Holes measuring 1-1/2 inch or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
8. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
9. All holes shall be cut in accordance with the restrictions listed above and as illustrated in detail 6a.
10. Limit three maximum-size holes per span.
11. A group of round holes at approximately the same location shall be permitted if it meets the requirements for a single round hole circumscribed around them.

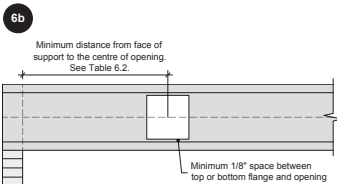


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

DUCT CHASE OPENINGS

Rules for Cutting Duct Chase Openings in I-joists

1. The distance between the inside edge of the support and the centreline of a duct chase opening shall be in compliance with the requirements of Table 6.2.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. The maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
4. All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
5. Limit one maximum-size duct chase opening per span.

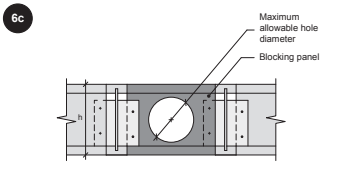


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

HOLES IN BLOCKING PANELS

Maximum Allowable Hole Size in Lateral-restraint-only Blocking Panels

1. The maximum allowable hole size for a lateral-restraint-only blocking panel is 2/3 of the lesser dimension of the blocking's depth or length. Assuming the blocking panel is longer than its height (or depth), the table above applies. For other applications, contact Nordic Structures.
2. Holes cut into the blocking panels are subject to the following limitations:
 - The top and bottom flanges of an I-joist blocking panel must never be cut, notched or otherwise modified.
 - Field-cut holes must be centred in the blocking horizontally.
 - While round holes are preferred, rectangle holes may be used provided the corners are not over cut. Slightly rounding corners or pre-drilling corners with a 1-inch-diameter bit is recommended.
 - All holes must be cut in a workman-like manner in accordance with the limitations listed above.



I-joist or rim board blocking depth (in.)	Maximum allowable hole diameter or (in.) ^(a)
9-1/2	6-1/4
11-7/8	7-3/4
14	9-3/4
16	10-1/2

^(a) Maximum allowable hole diameter in blocking panel, where the blocking panel is longer than its height.

TABLE 6.1 - LOCATION OF WEB HOLES

Simple or multiple span		Minimum distance from inside face of any support to centre of hole (ft.-in.)																
Joist depth	Joist series	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4		
9-1/2"	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"	-	-	-	-	-	-	-	-	-	-	-
	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"	-	-	-	-	-	-	-	-	-	-	-
	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	-	-	-	-	-	-	-	-	-	-	-
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"	-	-	-	-	-	-	-	-	-	-	-
11-7/8"	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-8"	7'-9"	-	-	-	-	-	-	-	-
	NI-40x	0'-7"	0'-8"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-2"	8'-4"	-	-	-	-	-	-	-	-
	NI-60	0'-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10'-0"	-	-	-	-	-	-	-	-
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	-	-	-	-	-	-	-	-
14"	NI-20	0'-7"	0'-8"	1'-5"	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"	-	-	-	-	-	-	-	-
	NI-40x	0'-7"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8'-3"	10'-2"	-	-	-	-	-	-
	NI-60	0'-7"	0'-8"	1'-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"	-	-	-	-	-
	NI-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10'-0"	10'-8"	12'-4"	13'-9"	-	-	-	-	-
16"	NI-20	0'-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9'-4"	11'-4"	12'-11"	-	-	-	-	-
	NI-40x	0'-7"	0'-8"	0'-8"	1'-6"	2'-10"	3'-2"	4'-2"	5'-8"	6'-4"	7'-0"	8'-5"	9'-8"	10'-2"	12'-2"	13'-9"	-	-
	NI-60	0'-7"	0'-8"	0'-8"	1'-6"	2'-10"	3'-2"	4'-2"	5'-8"	6'-4"	7'-0"	8'-5"	9'-8"	10'-2"	12'-2"	13'-9"	-	-
	NI-80	0'-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"	-	-
16"	NI-80	0'-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"	-	-
	NI-90	0'-7"	0'-8"	0'-8"	1'-9"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	9'-10"	11'-3"	11'-9"	13'-6"	15'-4"	-	-

- Notes:**
1. Tabulated values are applicable to residential floor construction meeting the above design criteria.
 2. The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

Design Criteria	
Joist spacing	Up to 24 inches
Loads	Live load = 40 psf and dead load = 15 psf
Deflection limits	L/480 under live load and L/240 under total load

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

Simple span		Minimum distance from inside face of any support to centre of opening (ft.-in.)																
Joist depth	Joist series	Duct chase length (in.)																
		8	10	12	14	16	18	20	22	24								
9-1/2"	NI-20	4'-1"	4'-5"	4'-10"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	-	-	-	-	-	-	-	-	-	-
	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	-	-	-	-	-	-	-	-	-	-
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"	-	-	-	-	-	-	-	-
11-7/8"	NI-20	5'-9"	6'-2"	6'-6"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	-	-	-	-	-	-	-	-	-	-
	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	-	-	-	-	-	-	-	-	-	-
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"	-	-	-	-	-	-	-	-
14"	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10'-11"	-	-	-	-	-	-	-	-
	NI-40x	8'-1"	8'-6"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	-	-	-	-	-	-	-	-	-	-
	NI-60	8'-9"	9'-3"	9'-8"	10'-11"	10'-6"	11'-1"	11'-6"	-	-	-	-	-	-	-	-	-	-
	NI-80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"	-	-	-	-	-	-	-	-
16"	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"	11'-5"	11'-9"	12'-4"	12'-11"	-	-	-	-	-	-	-	-
	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	-	-	-	-	-	-	-	-	-	-
	NI-80	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"	-	-	-	-	-	-	-	-
	NI-90	10'-9"	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-10"	-	-	-	-	-	-	-	-



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B7 DR - i5032**
Type: **Beam**

3 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

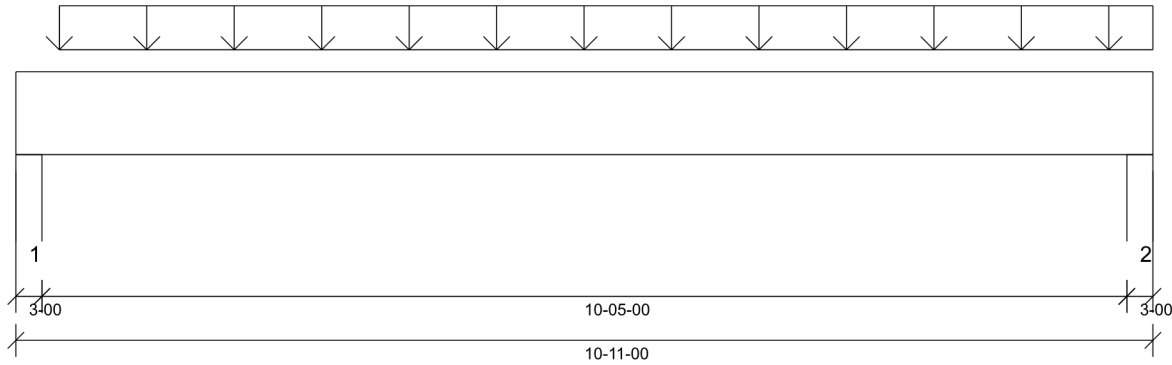
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9/13

Report Version: 2020.06.20

01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0'- 10 1/4" Bottom: 10'- 11"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2"
- 615 psi Wall @ 10'- 9"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 5"	1.25D + 1.5L	1.00	17294 lb ft	34949 lb ft	Passed - 49%
Factored Shear:	1'- 1/2"	1.25D + 1.5L	1.00	5980 lb	16578 lb	Passed - 36%
Live Load (LL) Pos. Defl.:	5'- 5 1/2"	L		0.221"	L/360	Passed - L/564
Total Load (TL) Pos. Defl.:	5'- 5 1/2"	D + L		0.338"	L/240	Passed - L/370

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-00	1.25D + 1.5L	1.00	6567 lb		16380 lb	9686 lb	Passed - 68%
2	3-00	1.25D + 1.5L	1.00	6793 lb		16380 lb	9686 lb	Passed - 70%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	10'- 11"	Self Weight	Top	14 lb/ft	-	-	-
Uniform	0'- 5"	10'- 11"	Smoothed Load	Top	295 lb/ft	590 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	1(i3200)	1606 lb	3051 lb	-	-
2	10'- 8"	10'- 11"	4(i3387)	1651 lb	3142 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061144

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B8 DR - i4998**
Type: **Beam**

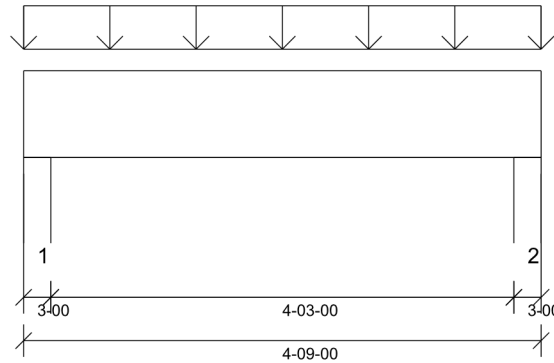
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0'- 10 1/4" Bottom: 4'- 9"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2"
- 615 psi Wall @ 4'- 7"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 3"	1.25D + 1.5L	1.00	2980 lb ft	23299 lb ft	Passed - 13%
Factored Shear:	1'- 1/2"	1.25D + 1.5L	1.00	1996 lb	11052 lb	Passed - 18%
Live Load (LL) Pos. Defl.:	2'- 4 7/16"	L		0.010"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 4 7/16"	D + L		0.015"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-00	1.25D + 1.5L	1.00	3103 lb		10920 lb	6458 lb	Passed - 48%
2	3-00	1.25D + 1.5L	1.00	3145 lb		10920 lb	6458 lb	Passed - 49%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 9"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	4'- 9"	Smoothed Load	Top	307 lb/ft	614 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	4(i3387)	756 lb	1466 lb	-	-
2	4'- 6"	4'- 9"	3(i3386)	746 lb	1448 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061145

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B9 - i5035**
Type: **Beam**

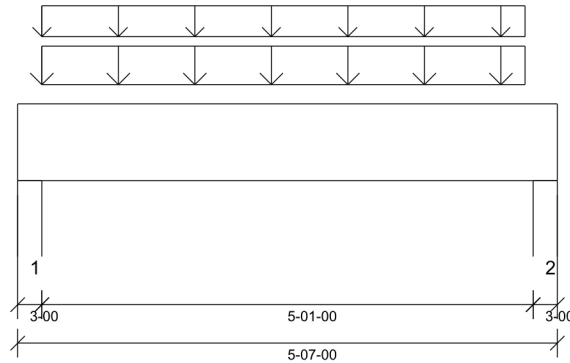
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9/13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 0'- 8 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2"
- 615 psi Wall @ 5'- 5"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 9"	1.25D + 1.5L	1.00	4358 lb ft	23299 lb ft	Passed - 19%
Factored Shear:	1'- 1/2"	1.25D + 1.5L	1.00	3100 lb	11052 lb	Passed - 28%
Live Load (LL) Pos. Defl.:	2'- 9 1/2"	L		0.020"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 9 1/2"	D + L		0.031"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-00	1.25D + 1.5L	1.00	3112 lb		10920 lb	6458 lb	Passed - 48%
2	3-00	1.25D + 1.5L	1.00	3016 lb		10920 lb	6458 lb	Passed - 47%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 7"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 3"	5'- 3"	Smoothed Load	Back	170 lb/ft	339 lb/ft	-	-
Uniform	0'- 3"	5'- 3"	Smoothed Load	Front	116 lb/ft	231 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	3(i3386)	753 lb	1448 lb	-	-
2	5'- 4"	5'- 7"	2(i3282)	730 lb	1402 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061146

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B10 - I4966**
Type: **Beam**

2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

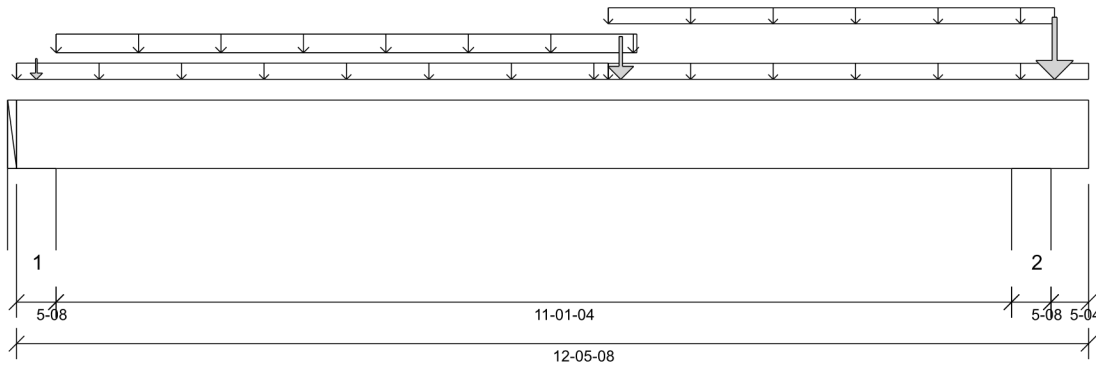
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20

01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/180,

TL Deflection Limit: L/120,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 6'- 5"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Wall @ 11'- 9 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 1/4"	1.25D + 1.5L	1.00	5693 lb ft	23299 lb ft	Passed - 24%
Factored Neg. Moment:	11'- 9 1/2"	1.25D + 1.5L + S	1.00	811 lb ft	22409 lb ft	Passed - 4%
Factored Shear:	10'- 9 1/4"	1.25D + 1.5L	1.00	1418 lb	11052 lb	Passed - 13%
Live Load (LL) Pos. Defl.:	6'- 3 3/8"	L		0.083"	L/360	Passed - L/999
Live Load (LL) Neg. Defl.:	12'- 5 1/2"	L		0.014"	L/180	Passed - L/373
Total Load (TL) Pos. Defl.:	6'- 2 1/4"	D + L		0.167"	L/240	Passed - L/799
Total Load (TL) Neg. Defl.:	12'- 5 1/2"	D + L		0.028"	L/120	Passed - L/185
Permanent Deflection:	12'- 5 1/2"			-	L/360	Passed - L/378

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08	1.25D + 1.5S	0.65	1019 lb		13013 lb	7695 lb	Passed - 13%
2	5'-08	1.25D + 1.5L	1.00	4450 lb		20020 lb	11839 lb	Passed - 38%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 5 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	6'- 10 1/2"	FC3 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Uniform	0'- 5 1/2"	7'- 2 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	6'- 10 1/2"	12'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	4 lb/ft	8 lb/ft	-	-
Uniform	6'- 10 1/2"	12'- 3/4"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	7'- 1/4"	7'- 1/4"	B13(i4875)	Front	457 lb	786 lb	-	-
Point	12'- 3/4"	12'- 3/4"	B11(i5126)	Front	840 lb	1279 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E56(i5164)	Top	88 lb	-	150 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	E21(i3183)	662 lb	405 lb	155 lb	-
2	11'- 6 3/4"	12'- 1/4"	2(i3282)	1317 lb	1804 lb	-5 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=3.500", W=3.500". LDF=1.00, Pf=2969 lb, Qr=10920 lb, Result=27.18%.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061147

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B11 - i5126**
Type: **Beam**

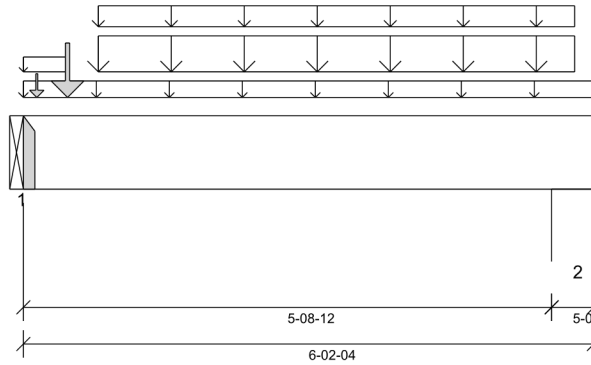
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 0'- 8 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 5'- 9 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 9 3/4"	1.25D + 1.5L	1.00	4281 lb ft	23299 lb ft	Passed - 18%
Factored Shear:	4'- 11 1/4"	1.25D + 1.5L	1.00	3046 lb	11052 lb	Passed - 28%
Live Load (LL) Pos. Defl.:	2'- 10 7/8"	L		0.023"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 10 7/8"	D + L		0.038"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	2964 lb		5460 lb	-	Passed - 54%
2	5-08	1.25D + 1.5L	1.00	3154 lb		20020 lb	11839 lb	Passed - 27%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HGUS410		-	-	-	Connector manually specified by the user.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 2 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	6'- 2 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'	0'- 5 3/4"	FC3 Floor Decking (Plan View Fill)	Top	8 lb/ft	16 lb/ft	-	-
Uniform	0'- 9 3/4"	5'- 11 3/4"	Smoothed Load	Back	162 lb/ft	323 lb/ft	-	-
Uniform	0'- 9 3/4"	5'- 11 3/4"	Smoothed Load	Front	52 lb/ft	104 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	J3(i4882)	Front	41 lb	82 lb	-	-
Point	0'- 5 3/4"	0'- 5 3/4"	J4(i4962)	Back	164 lb	329 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B10(i4966)	840 lb	1279 lb	-	-
2	5'- 8 3/4"	6'- 2 1/4"	E17(i3160)	903 lb	1348 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061148

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B12 - i4964**
Type: **Beam**

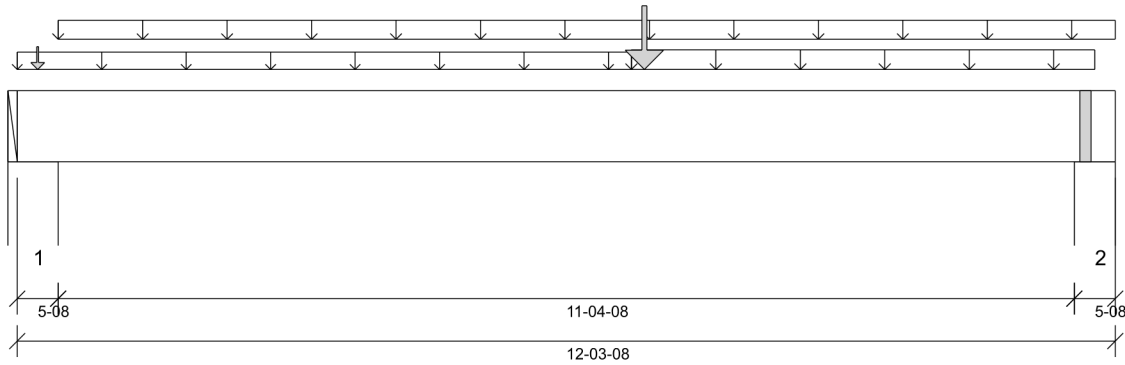
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 6'- 5"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Wall @ 11'- 11"

PLY TO PLY CONNECTION:
3 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 8" O/C

PLY TO PLY CONNECTION ASSUMES ANY
SUPPORTED BEAM HANGERS ARE FASTENED
TO THIS BEAM WITH MIN. 3.5" FASTENERS.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 1/4"	1.25D + 1.5L	0.96	9001 lb ft	22423 lb ft	Passed - 40%
Factored Shear:	11'- 1/2"	1.25D + 1.5L	0.96	2132 lb	10637 lb	Passed - 20%
Live Load (LL) Pos. Defl.:	6'- 4 13/16"	L		0.141"	L/360	Passed - L/970
Total Load (TL) Pos. Defl.:	6'- 4 1/4"	D + L		0.275"	L/240	Passed - L/496

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5S + L	0.85	1834 lb		17086 lb	10104 lb	Passed - 18%
2	5-08	1.25D + 1.5L	0.96	2342 lb		19267 lb	11393 lb	Passed - 21%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 3 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	6'- 10 1/2"	FC3 Floor Decking (Plan View Fill)	Top	9 lb/ft	19 lb/ft	-	-
Uniform	0'- 5 1/2"	12'- 3 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	6'- 10 1/2"	12'- 3/4"	FC3 Floor Decking (Plan View Fill)	Top	23 lb/ft	47 lb/ft	-	-
Point	7'- 1/4"	7'- 1/4"	B13(i4875)	Back	590 lb	1050 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E82(i5190)	Top	88 lb	-	150 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	E20(i3182)	823 lb	606 lb	155 lb	-
2	11'- 10"	12'- 3 1/2"	E18(i3170)	867 lb	815 lb	-5 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061149

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B13 - i4875**
Type: **Beam**

2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

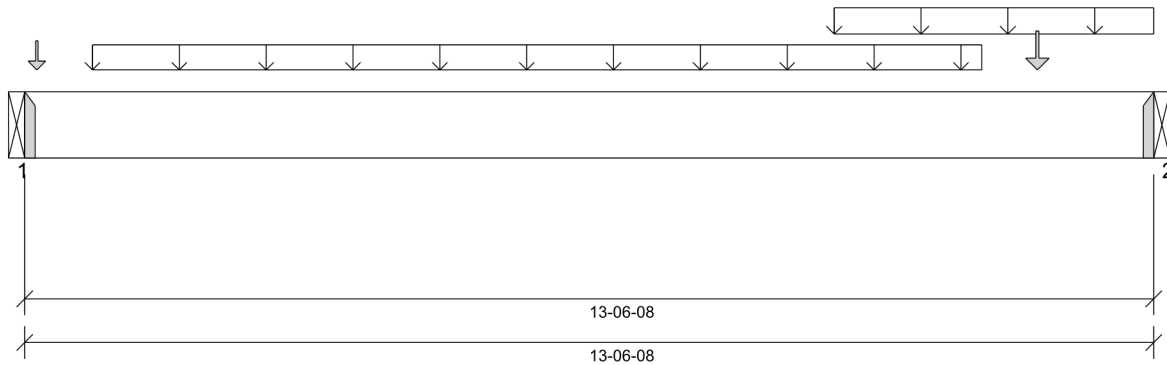
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20

01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 3 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 13'- 6 1/2"

PLY TO PLY CONNECTION:
3 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 8" O/C

PLY TO PLY CONNECTION ASSUMES ANY
SUPPORTED BEAM HANGERS ARE FASTENED
TO THIS BEAM WITH MIN. 3.5" FASTENERS.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 9 3/4"	1.25D + 1.5L	1.00	6414 lb ft	23299 lb ft	Passed - 28%
Factored Shear:	12'- 9"	1.25D + 1.5L	1.00	2098 lb	11052 lb	Passed - 19%
Live Load (LL) Pos. Defl.:	6'- 11"	L		0.199"	L/360	Passed - L/815
Total Load (TL) Pos. Defl.:	6'- 10 15/16"	D + L		0.314"	L/240	Passed - L/518

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	1753 lb		5460 lb	-	Passed - 32%
2	1-08	1.25D + 1.5L	1.00	2309 lb		5460 lb	-	Passed - 42%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
1	HGUS410		-	-	-	Connector manually specified by the user.		
2	HGUS410		-	-	-	Connector manually specified by the user.		

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 6 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 9 3/4"	11'- 5 3/4"	Smoothed Load	Back	53 lb/ft	107 lb/ft	-	-
Uniform	9'- 8 1/2"	13'- 6 1/2"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	J3(i4882)	Back	43 lb	87 lb	-	-
Point	12'- 1 3/4"	12'- 1 3/4"	J3(i3514)	Back	77 lb	153 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B10(i4966)	457 lb	786 lb	-	-
2	13'- 6 1/2"	13'- 6 1/2"	B12(i4964)	590 lb	1050 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061150

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **2ND FLR FRAMING**
Label: **B14 - i5118**
Type: **Beam**

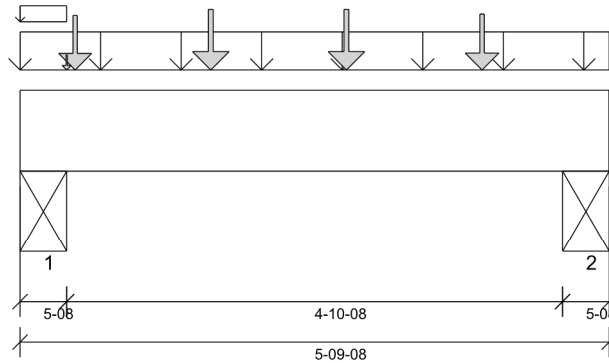
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/2"
- 615 psi Beam @ 5'- 5"

PLY TO PLY CONNECTION:
3 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 6" O/C

PLY TO PLY CONNECTION ASSUMES ANY
SUPPORTED BEAM HANGERS ARE FASTENED
TO THIS BEAM WITH MIN. 3.5" FASTENERS.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 2 1/2"	1.25D + 1.5L + S	1.00	3348 lb ft	23299 lb ft	Passed - 14%
Factored Shear:	1'- 3"	1.25D + 1.5L + S	1.00	2426 lb	11052 lb	Passed - 22%
Live Load (LL) Pos. Defl.:	2'- 10 13/16"	L + 0.5S		0.011"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 10 13/16"	D + L + 0.5S		0.021"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08	1.25D + 1.5L + S	1.00	3080 lb		20020 lb	11839 lb	Passed - 26%
2	5'-08	1.25D + 1.5S + L	1.00	2779 lb		20020 lb	11839 lb	Passed - 23%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 9 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	5'- 9 1/2"	E49(i4935)	Top	196 lb/ft	-	256 lb/ft	-
Uniform	0'	0'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	6 lb/ft	12 lb/ft	-	-
Point	0'- 6 1/2"	0'- 6 1/2"	J1(i5131)	Front	151 lb	302 lb	-	-
Point	1'- 10 1/2"	1'- 10 1/2"	J1(i5122)	Front	174 lb	349 lb	-	-
Point	3'- 2 1/2"	3'- 2 1/2"	J1(i5038)	Front	174 lb	349 lb	-	-
Point	4'- 6 1/2"	4'- 6 1/2"	J1(i5120)	Front	156 lb	312 lb	-	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	0 lb	1 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i3431)	976 lb	760 lb	741 lb	-
2	5'- 4"	5'- 9 1/2"	STL BM(i3430)	874 lb	557 lb	741 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061151

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **1ST FLR FRAMING**
Label: **B1 - i5025**
Type: **Beam**

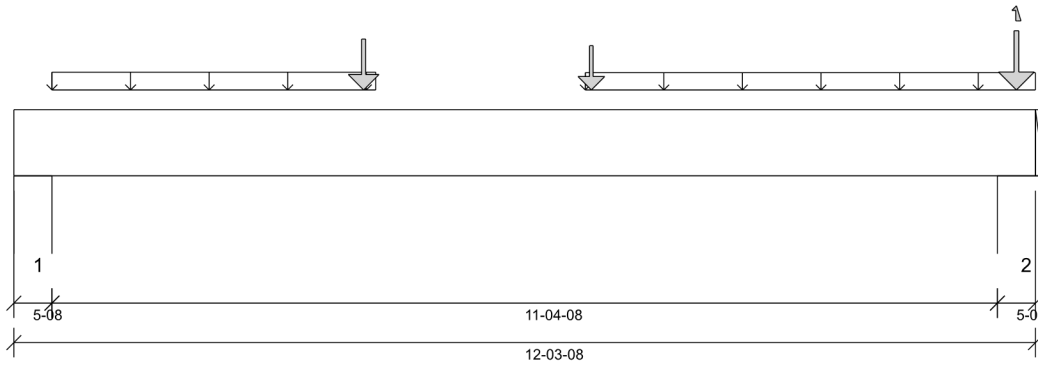
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:
Top: 6'-5" Bottom: 6'-5"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'-4 1/2"
- 615 psi Wall @ 11'-11"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 11 3/8"	1.25D + 1.5L + S	0.99	4335 lb ft	22209 lb ft	Passed - 20%
Factored Neg. Moment:	11'- 11"	1.25D + 1.5L	0.99	159 lb ft	22218 lb ft	Passed - 1%
Factored Shear:	1'- 3"	1.25D + 1.5L + S	0.99	1190 lb	10945 lb	Passed - 11%
Live Load (LL) Pos. Defl.:	6'- 1 7/16"	L + 0.5S		0.079"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 3/8"	D + L + 0.5S		0.151"	L/240	Passed - L/905

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L + S	0.99	1264 lb		19826 lb	11724 lb	Passed - 11%
2	5-08	1.25D + 1.5L	0.99	2196 lb		19835 lb	11729 lb	Passed - 19%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 3 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 5 1/2"	4'- 4 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	6'- 10 1/2"	12'- 3 1/2"	FC1 Floor Decking (Plan View Fill)	Top	17 lb/ft	34 lb/ft	-	-
Point	6'- 11 3/8"	6'- 11 3/8"	B3(i5004)	Back	175 lb	334 lb	-	-
Point	4'- 2 1/2"	4'- 2 1/2"	PBO3(i3273)	Top	286 lb	336 lb	-	-
Point	12'- 3/4"	12'- 3/4"	E18(i3170)	Top	385 lb	381 lb	-5 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W30(i31)	539 lb	407 lb	-	-
2	11'- 10"	12'- 3 1/2"	W16(i16)	748 lb	827 lb	-5 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

REVIEWED



STRUCTURAL COMPONENT ONLY
DWG # TF22061152



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **1ST FLR FRAMING**
Label: **B2 - i5015**
Type: **Beam**

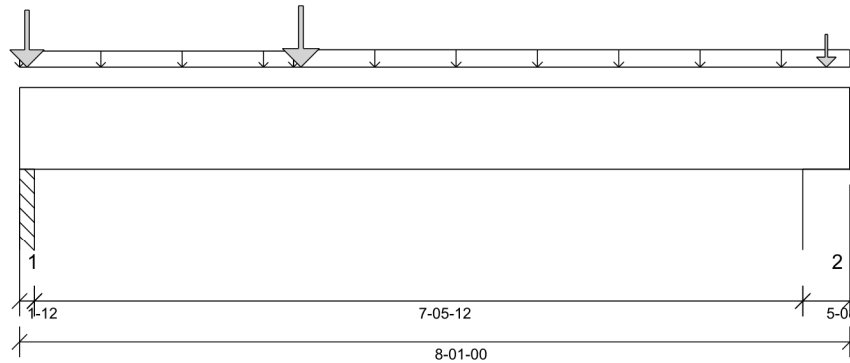
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 4'- 9 3/4"

Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3/4"
- 615 psi Wall @ 7'- 8 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 8 7/8"	1.25D + 1.5L	1.00	1738 lb ft	23299 lb ft	Passed - 7%
Factored Shear:	0'- 11 1/4"	1.25D + 1.5L	1.00	662 lb	11052 lb	Passed - 6%
Live Load (LL) Pos. Defl.:	3'- 7 7/8"	L		0.014"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 8"	D + L		0.023"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	1403 lb		6370 lb	3767 lb	Passed - 37%
2	5-08	1.25D + 1.5L	1.00	851 lb		20020 lb	11839 lb	Passed - 7%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 1"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	2'- 8"	FC1 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Uniform	2'- 8"	8'- 1"	FC1 Floor Decking (Plan View Fill)	Top	13 lb/ft	27 lb/ft	-	-
Point	2'- 8 7/8"	2'- 8 7/8"	B3(i5004)	Front	191 lb	366 lb	-	-
Point	0'- 7/8"	0'- 7/8"	PBO2(i3272)	Top	209 lb	296 lb	-	-
Point	7'- 10 1/4"	7'- 10 1/4"	E18(i3170)	Top	90 lb	122 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO1(i35)	405 lb	604 lb	-	-
2	7'- 7 1/2"	8'- 1"	W16(i16)	249 lb	354 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

REVIEWED



STRUCTURAL COMPONENT ONLY
DWG # TF22061153



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **1ST FLR FRAMING**
Label: **B3 - i5004**
Type: **Beam**

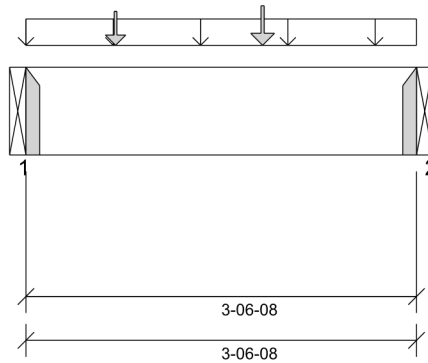
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 3 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 3'- 6 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 5/8"	1.25D + 1.5L	1.00	753 lb ft	11650 lb ft	Passed - 6%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	581 lb	5526 lb	Passed - 11%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	787 lb		2730 lb	-	Passed - 29%
2	1-08	1.25D + 1.5L	1.00	721 lb		2730 lb	-	Passed - 26%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HUS1.81/10		-	-	-	Connector manually specified by the user.
2	HUS1.81/10		-	-	-	Connector manually specified by the user.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 6 1/2"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	3'- 6 1/2"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Point	0'- 9 3/4"	0'- 9 3/4"	J4(i5020)	Back	59 lb	119 lb	-	-
Point	2'- 1 3/4"	2'- 1 3/4"	J4(i5041)	Back	78 lb	156 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B2(i5015)	191 lb	366 lb	-	-
2	3'- 6 1/2"	3'- 6 1/2"	B1(i5025)	175 lb	334 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY
DWG # TF22061154

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **1ST FLR FRAMING**
Label: **B4 - i4945**
Type: **Beam**

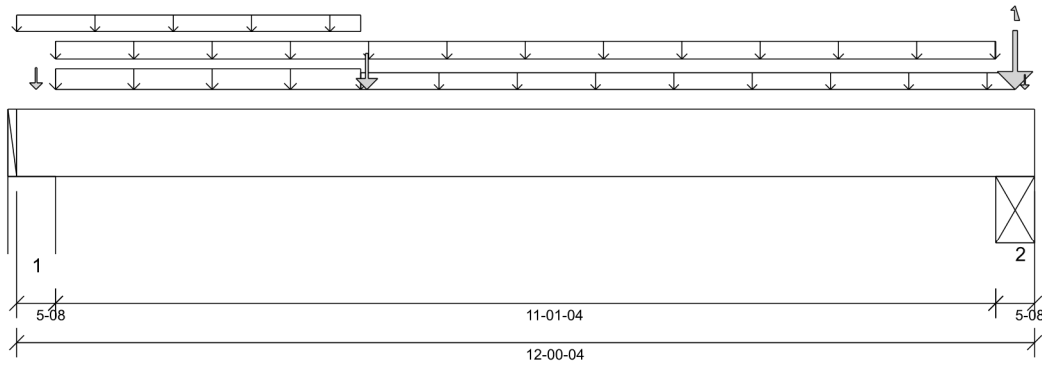
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 7'-4 1/4"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'-4 1/2"
- 615 psi Beam @ 11'-7 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'-1 5/8"	1.25D + 1.5L	1.00	8191 lb ft	23299 lb ft	Passed - 35%
Factored Neg. Moment:	11'-7 3/4"	1.25D + 1.5L	1.00	693 lb ft	22130 lb ft	Passed - 3%
Factored Shear:	1'-3"	1.25D + 1.5L + S	1.00	2514 lb	11052 lb	Passed - 23%
Live Load (LL) Pos. Defl.:	5'-5 15/16"	L		0.115"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'-7 3/16"	D + L		0.235"	L/240	Passed - L/566

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08"	1.25D + 1.5L + S	1.00	3488 lb		20020 lb	11839 lb	Passed - 29%
2	5'-08"	1.25D + 1.5L	1.00	6466 lb		20020 lb	11839 lb	Passed - 55%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'-1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	4'-3/4"	FC1 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Uniform	0'-5 1/2"	11'-6 3/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'-5 1/2"	4'-3/4"	User Load	Top	40 lb/ft	80 lb/ft	-	-
Uniform	4'-3/4"	11'-9 1/2"	FC1 Floor Decking (Plan View Fill)	Top	13 lb/ft	27 lb/ft	-	-
Point	4'-1 5/8"	4'-1 5/8"	B5(i5155)	Front	642 lb	987 lb	-	-
Point	0'-2 3/4"	0'-2 3/4"	E21(i3183)	Top	289 lb	190 lb	56 lb	-
Point	11'-9 1/2"	11'-9 1/2"	2(i3282)	Top	1422 lb	1967 lb	-5 lb	-
Point	11'-10 7/8"	11'-10 7/8"	FC1 Floor Decking (Plan View Fill)	Top	2 lb	5 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'-5 1/2"	W30(i31)	1316 lb	1253 lb	58 lb	-
2	11'-6 3/4"	12'-1/4"	STL BM(i30)	2115 lb	2486 lb	-7 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=1.500", W=3.500". LDF=1.00, Pf=4728 lb, Qr=5460 lb, Result=86.59%.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061155

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **1ST FLR FRAMING**
Label: **B5 - i5155**
Type: **Beam**

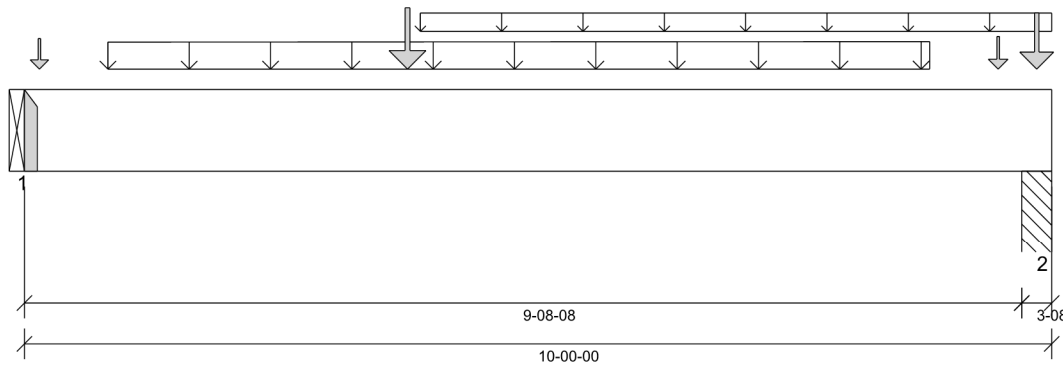
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Column @ 9'- 9 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 1 3/4"	1.25D + 1.5L	1.00	6205 lb ft	11650 lb ft	Passed - 53%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	2266 lb	5526 lb	Passed - 41%
Live Load (LL) Pos. Defl.:	4'- 9 11/16"	L		0.177"	L/360	Passed - L/659
Total Load (TL) Pos. Defl.:	4'- 10 1/8"	D + L		0.306"	L/240	Passed - L/380
Permanent Deflection:	4'- 10 11/16"			-	L/360	Passed - L/924

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	2271 lb		2730 lb	-	Passed - 83%
2	3-08	1.25D + 1.5L	1.00	2984 lb		6370 lb	3767 lb	Passed - 79%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HUS1.81/10		-	-	-	Connector manually specified by the user.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	10'	Self Weight	Top	5 lb/ft	-	-	-
Uniform	3'- 10 1/4"	10'	User Load	Top	60 lb/ft	-	-	-
Tapered	0'- 9 3/4"	8'- 9 3/4"	Smoothed Load	Back	76 To 80 lb/ft	153 To 159 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	J3(i4631)	Back	63 lb	126 lb	-	-
Point	9'- 5 3/4"	9'- 5 3/4"	J3(i5005)	Back	72 lb	143 lb	-	-
Point	3'- 8 3/4"	3'- 8 3/4"	BBO (H)(i40)	Top	209 lb	360 lb	-	-
Point	9'- 10 1/4"	9'- 10 1/4"	PBO2(i3272)	Top	209 lb	297 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B4(i4945)	642 lb	987 lb	-	-
2	9'- 8 1/2"	10'	PBO1(i35)	952 lb	1188 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY
DWG # TF22061156

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19**
Level: **1ST FLR FRAMING**
Label: **B6L - i5097**
Type: **Beam**

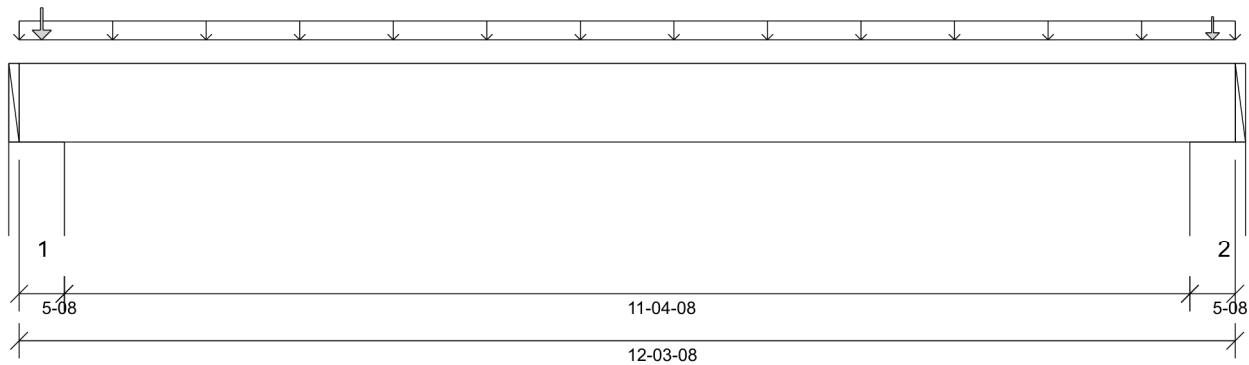
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/06/2022 10:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 11'- 4 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Wall @ 11'- 11"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 1 3/4"	1.25D + 1.5L	0.96	601 lb ft	11232 lb ft	Passed - 5%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5S + L	0.93	30 lb ft	3252 lb ft	Passed - 1%
Factored Shear:	1'- 3"	1.25D + 1.5L	0.96	181 lb	5328 lb	Passed - 3%
Live Load (LL) Pos. Defl.:	6'- 1 11/16"	L		0.024"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 1 3/4"	D + L		0.043"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5S + L	0.93	374 lb		9346 lb	5527 lb	Passed - 7%
2	5-08	1.25D + 1.5L	0.96	300 lb		9651 lb	5707 lb	Passed - 5%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 3 1/2"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	12'- 3 1/2"	FC2 Floor Decking (Plan View Fill)	Top	7 lb/ft	15 lb/ft	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E7(i3046)	Top	62 lb	-	75 lb	-
Point	12'- 3/4"	12'- 3/4"	E19(i3181)	Top	30 lb	24 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W14(i3)	138 lb	90 lb	77 lb	-
2	11'- 10"	12'- 3 1/2"	W31(i32)	102 lb	114 lb	-2 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY
DWG # TF22061157

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B15 - i5437**
Type: **Beam**

2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

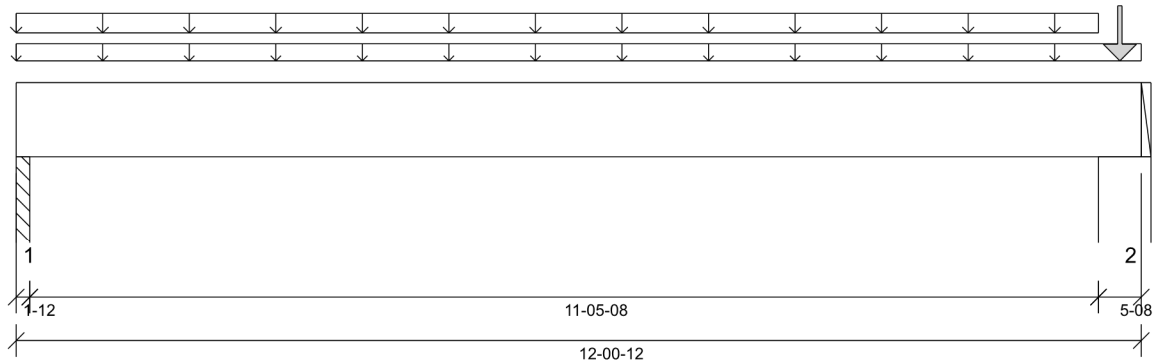
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20

01/06/2022 10:30



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 11'- 7 1/4"

Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3/4"
- 615 psi Wall @ 11'- 8 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 10"	1.25D + 1.5L	0.66	1815 lb ft	15278 lb ft	Passed - 12%
Factored Neg. Moment:	11'- 8 1/4"	1.25D + 1.5S + L	0.70	77 lb ft	15252 lb ft	Passed - 1%
Factored Shear:	10'- 9 3/4"	1.25D + 1.5L	0.66	542 lb	7247 lb	Passed - 7%
Total Load (TL) Pos. Defl.:	5'- 10 3/8"	D + L		0.071"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	0.66	636 lb		4177 lb	2470 lb	Passed - 26%
2	5-08	1.25D + 1.5S + L	0.70	1125 lb		13952 lb	8250 lb	Passed - 14%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 3/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	12'- 3/4"	FC1 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Uniform	0'	11'- 7 1/4"	User Load	Top	60 lb/ft	-	-	-
Point	11'- 10"	11'- 10"	E32(i3249)	Top	160 lb	86 lb	150 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO4(i5435)	436 lb	61 lb	-	-
2	11'- 7 1/4"	12'- 3/4"	W6(i1)	597 lb	151 lb	150 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061158

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B16 - i5440**
Type: **Beam**

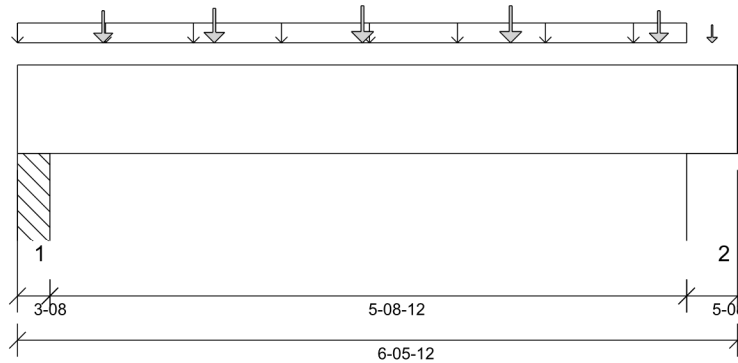
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/06/2022 10:30



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Column @ 0'- 2 1/2"
- 615 psi Wall @ 6'- 1 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 1 1/4"	1.25D + 1.5L	0.97	1320 lb ft	11245 lb ft	Passed - 12%
Factored Shear:	5'- 2 3/4"	1.25D + 1.5L	0.97	819 lb	5334 lb	Passed - 15%
Live Load (LL) Pos. Defl.:	3'- 1 3/4"	L		0.011"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 1 13/16"	D + L		0.024"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3'-08	1.25D + 1.5L	0.97	887 lb		6149 lb	3636 lb	Passed - 24%
2	5'-08	1.25D + 1.5L	0.97	905 lb		9662 lb	5714 lb	Passed - 16%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 5 3/4"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	6'- 1/4"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 9 1/4"	0'- 9 1/4"	J4(i5456)	Front	52 lb	105 lb	-	-
Point	1'- 9 1/4"	1'- 9 1/4"	J4(i5482)	Front	60 lb	120 lb	-	-
Point	3'- 1 1/4"	3'- 1 1/4"	J4(i5564)	Front	69 lb	137 lb	-	-
Point	4'- 5 1/4"	4'- 5 1/4"	J4(i5565)	Front	69 lb	137 lb	-	-
Point	5'- 9 1/4"	5'- 9 1/4"	J4(i5566)	Front	52 lb	105 lb	-	-
Point	6'- 3"	6'- 3"	E90(i5655)	Top	15 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO4(i5435)	353 lb	298 lb	-	-
2	6'- 1/4"	6'- 5 3/4"	W93(i5567)	356 lb	306 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY
DWG # TF22061159

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B17L - i5611**
Type: **Beam**

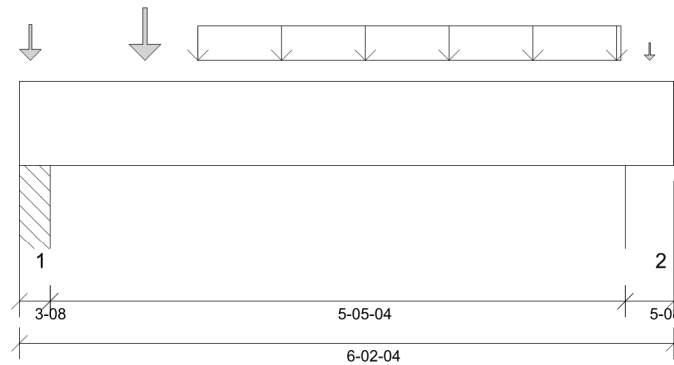
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/06/2022 10:30



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 0'- 10 1/2"

Factored Resistance of Support Material:

- 615 psi Column @ 0'- 2 1/2"
- 615 psi Wall @ 5'- 9 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 2 1/4"	1.25D + 1.5L	1.00	2029 lb ft	11650 lb ft	Passed - 17%
Factored Shear:	4'- 11 1/4"	1.25D + 1.5L	1.00	1352 lb	5526 lb	Passed - 24%
Live Load (LL) Pos. Defl.:	3'- 3/16"	L		0.022"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 3/16"	D + L		0.033"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	1537 lb		6370 lb	3767 lb	Passed - 41%
2	5-08	1.25D + 1.5L	1.00	1382 lb		10010 lb	5919 lb	Passed - 23%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 2 1/4"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	1'- 8 1/4"	5'- 8 1/4"	Smoothed Load	Back	118 lb/ft	237 lb/ft	-	-
Point	0'- 1 1/4"	0'- 1 1/4"	J2(i5618)	Back	70 lb	140 lb	-	-
Point	1'- 2 1/4"	1'- 2 1/4"	J2(i5612)	Back	129 lb	259 lb	-	-
Point	5'- 11 1/2"	5'- 11 1/2"	E17(i3160)	Top	18 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO5(i5610)	372 lb	718 lb	-	-
2	5'- 8 3/4"	6'- 2 1/4"	W15(i15)	346 lb	629 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY
DWG # TF22061160

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 EL B**
Level: **2ND FLR FRAMING**
Label: **B20 - i5625**
Type: **Beam**

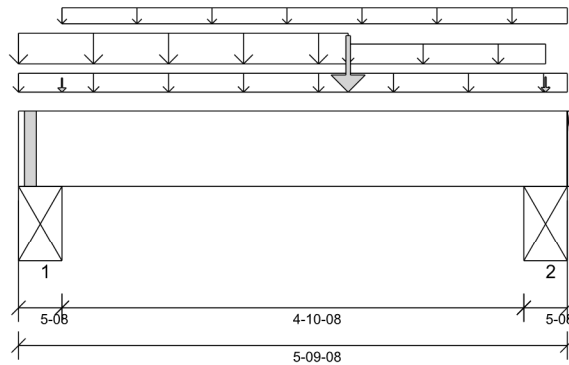
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/06/2022 11:22



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 4'- 10 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/2"
- 615 psi Beam @ 5'- 5"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 5 3/4"	1.25D + 1.5S + L	1.00	3353 lb ft	23299 lb ft	Passed - 14%
Factored Shear:	4'- 6 1/2"	1.25D + 1.5S + L	1.00	1775 lb	11052 lb	Passed - 16%
Live Load (LL) Pos. Defl.:	2'- 11 7/16"	S + 0.5L		0.013"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 11 5/16"	D + S + 0.5L		0.021"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5S + L	1.00	2397 lb		20020 lb	11839 lb	Passed - 20%
2	5-08	1.25D + 1.5S + L	1.00	2221 lb		20020 lb	11839 lb	Passed - 19%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 9 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	5'- 9 1/2"	E87(i5611)	Top	100 lb/ft	-	-	-
Uniform	-0'	3'- 5 3/4"	E87(i5611)	Top	96 lb/ft	-	256 lb/ft	-
Uniform	0'- 5 1/2"	5'- 9 1/2"	FC3 Floor Decking (Plan View Fill)	Top	13 lb/ft	27 lb/ft	-	-
Uniform	3'- 5 3/4"	5'- 6 3/4"	E87(i5611)	Top	30 lb/ft	-	93 lb/ft	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	1 lb	2 lb	-	-
Point	3'- 5 3/4"	3'- 5 3/4"	E87(i5611)	Top	275 lb	-	722 lb	-
Point	5'- 6 3/4"	5'- 6 3/4"	E87(i5611)	Top	7 lb	-	21 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i3431)	713 lb	67 lb	964 lb	-
2	5'- 4"	5'- 9 1/2"	STL BM(i3430)	674 lb	77 lb	863 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061161

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 EL B**
Level: **2ND FLR FRAMING**
Label: **B22 - i5615**
Type: **Beam**

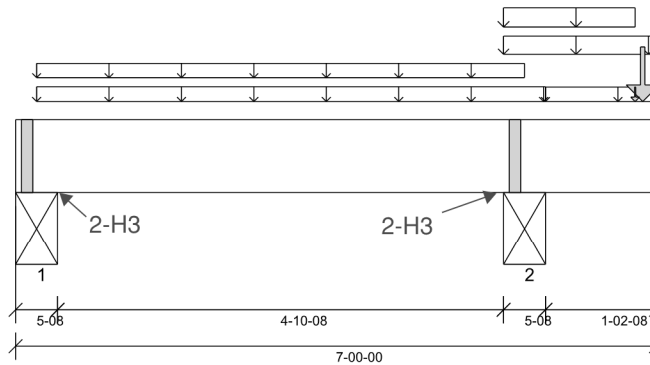
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/06/2022 11:22



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/180,

TL Deflection Limit: L/120,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 4'- 10 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 5'- 6 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Neg. Moment:	5'- 6 3/4"	1.25D + 1.5S + L	0.92	2598 lb ft	21394 lb ft	Passed - 12%
Factored Moment:	5'- 6 3/4"	1.25D + 1.5S + L	0.92	2598 lb ft	21394 lb ft	Passed - 12%
Factored Moment:				0 lb ft	0 lb ft	
Factored Moment:				0 lb ft	0 lb ft	
Factored Shear:	6'- 7"	1.25D + 1.5S	0.92	1881 lb	10117 lb	Passed - 19%
Live Load (LL) Deflection:	7'	S + 0.5L		0.009"	L/180	Passed - L/999
Total Load (TL) Deflection:	7'	D + S + 0.5L		0.020"	L/120	Passed - L/709
Total Load (TL) Pos. Defl.:	7'	D + S + 0.5L		0.020"	L/120	Passed - L/709
Total Load (TL) Neg. Defl.:	3'- 4 13/16"	D + S + 0.5L		0.011"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5S + L	0.92		-418 lb	-	-	
2	5-08	1.25D + 1.5L + S	0.78	2439 lb		15535 lb	9186 lb	Passed - 27%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 2 3/4"	5'- 9 1/2"	FC3 Floor Decking (Plan View Fill)	Top	8 lb/ft	17 lb/ft	-	-
Uniform	0'- 2 3/4"	5'- 6 3/4"	FC3 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Uniform	5'- 4"	7'	E95(i5633)	Top	100 lb/ft	-	-	-
Uniform	5'- 4"	6'- 9 1/4"	E95(i5633)	Top	30 lb/ft	-	93 lb/ft	-
Uniform	5'- 9 1/2"	7'	FC3 Floor Decking (Plan View Fill)	Top	6 lb/ft	12 lb/ft	-	-
Point	6'- 10 1/4"	6'- 10 1/4"	B23(i5613)	Back	710 lb	-	573 lb	-
Point	6'- 9 1/4"	6'- 9 1/4"	E95(i5633)	Top	7 lb	-	21 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i3431)	-166 lb	71/-2 lb	-183 lb	-
2	5'- 4"	5'- 9 1/2"	STL BM(i3430)	1240 lb	90 lb	911 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY
DWG # TF22061162

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 EL B**
Level: **2ND FLR FRAMING**
Label: **B21 - i5622**
Type: **Beam**

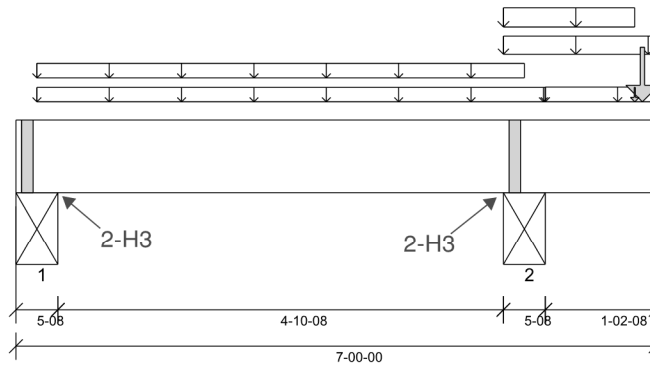
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/06/2022 11:22



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/180,

TL Deflection Limit: L/120,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 4'- 10 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 5'- 6 3/4"

PLY TO PLY CONNECTION:
3 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 8" O/C

PLY TO PLY CONNECTION ASSUMES ANY
SUPPORTED BEAM HANGERS ARE FASTENED
TO THIS BEAM WITH MIN. 3.5" FASTENERS.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Neg. Moment:	5'- 6 3/4"	1.25D + 1.5S + L	0.92	2691 lb ft	21389 lb ft	Passed - 13%
Factored Moment:	5'- 6 3/4"	1.25D + 1.5S + L	0.92	2691 lb ft	21389 lb ft	Passed - 13%
Factored Moment:				0 lb ft	0 lb ft	
Factored Moment:				0 lb ft	0 lb ft	
Factored Shear:	6'- 7"	1.25D + 1.5S	0.91	1948 lb	10108 lb	Passed - 19%
Live Load (LL) Deflection:	7'	S + 0.5L		0.010"	L/180	Passed - L/999
Total Load (TL) Deflection:	7'	D + S + 0.5L		0.021"	L/120	Passed - L/684
Live Load (LL) Pos. Defl.:	7'	S + 0.5L		0.010"	L/180	Passed - L/999
Total Load (TL) Pos. Defl.:	7'	D + S + 0.5L		0.021"	L/120	Passed - L/684
Total Load (TL) Neg. Defl.:	3'- 4 3/4"	D + S + 0.5L		0.011"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5S + L	0.92		-436 lb	-	-	
2	5-08	1.25D + 1.5L + S	0.78	2521 lb		15566 lb	9205 lb	Passed - 27%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 2 3/4"	5'- 9 1/2"	FC3 Floor Decking (Plan View Fill)	Top	6 lb/ft	12 lb/ft	-	-
Uniform	0'- 2 3/4"	5'- 6 3/4"	FC3 Floor Decking (Plan View Fill)	Top	7 lb/ft	15 lb/ft	-	-
Uniform	5'- 4"	7'	E93(i5632)	Top	100 lb/ft	-	-	-
Uniform	5'- 4"	6'- 9 1/4"	E93(i5632)	Top	30 lb/ft	-	93 lb/ft	-
Uniform	5'- 9 1/2"	7'	FC3 Floor Decking (Plan View Fill)	Top	9 lb/ft	18 lb/ft	-	-
Point	6'- 10 1/4"	6'- 10 1/4"	B23(i5613)	Front	740 lb	-	592 lb	-
Point	6'- 9 1/4"	6'- 9 1/4"	E93(i5632)	Top	7 lb	-	21 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i3431)	-175 lb	71/-3 lb	-188 lb	-
2	5'- 4"	5'- 9 1/2"	STL BM(i3430)	1282 lb	97 lb	935 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

REVIEWED





BUILDER:	BAYVIEW WELLINGTON	Job Name:	S38-19 EL B	2 Ply Member	Status:
SITE:	GREEN VALLEY EAST	Level:	2ND FLR FRAMING	1 3/4" x 9 1/2" (2.0E 3100)	Design
MODEL:	S38-19	Label:	B21 - i5622	WestFraser LVL	Passed
CITY:	BRADFORD	Type:	Beam		

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 EL B**
Level: **2ND FLR FRAMING**
Label: **B23 - i5613**
Type: **Beam**

2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

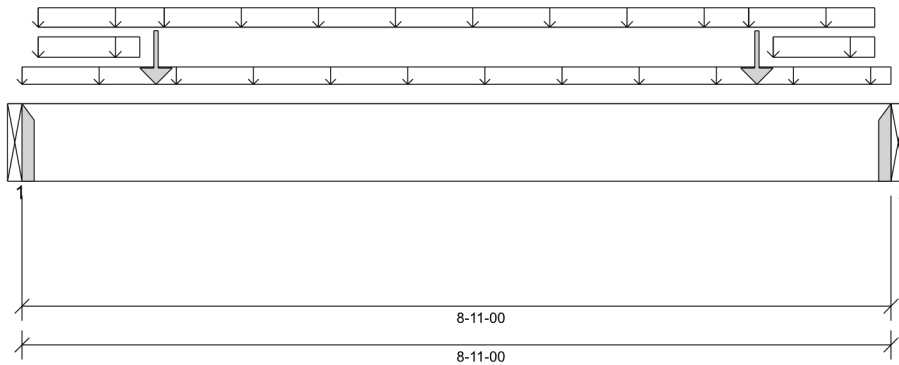
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20

01/06/2022 11:22



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 8'- 11"

PLY TO PLY CONNECTION:
3 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 8" O/C

PLY TO PLY CONNECTION ASSUMES ANY
SUPPORTED BEAM HANGERS ARE FASTENED
TO THIS BEAM WITH MIN. 3.5" FASTENERS.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 5 1/2"	1.25D + 1.5S	0.95	3183 lb ft	22190 lb ft	Passed - 14%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5S	0.95	1516 lb	10526 lb	Passed - 14%
Live Load (LL) Pos. Defl.:	4'- 5 1/2"	S		0.029"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 5 1/2"	D + S		0.073"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5S	0.95	1780 lb		5200 lb	-	Passed - 34%
2	1-08	1.25D + 1.5S	0.95	1779 lb		5200 lb	-	Passed - 34%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
1	HUC410		-	-	-	Connector manually specified by the user.		
2	HUC410		-	-	-	Connector manually specified by the user.		

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 11"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	8'- 11"	User Load	Front	17 lb/ft	-	41 lb/ft	-
Uniform	0'- 2"	1'- 5 1/2"	E97(i5635)	Top	100 lb/ft	-	-	-
Uniform	0'- 2"	1'- 2 1/2"	E97(i5635)	Top	30 lb/ft	-	93 lb/ft	-
Uniform	1'- 5 1/2"	7'- 5 1/2"	E96(i5634)	Top	100 lb/ft	-	-	-
Uniform	7'- 5 1/2"	8'- 9"	E94(i5631)	Top	100 lb/ft	-	-	-
Uniform	7'- 8 1/2"	8'- 9"	E94(i5631)	Top	30 lb/ft	-	93 lb/ft	-
Point	1'- 4 1/2"	1'- 4 1/2"	E97(i5635)	Top	146 lb	-	303 lb	-
Point	7'- 6 1/2"	7'- 6 1/2"	E94(i5631)	Top	146 lb	-	302 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B22(i5615)	710 lb	-	573 lb	-
2	8'- 11"	8'- 11"	B21(i5622)	740 lb	-	592 lb	-


DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

REVIEWED



	BUILDER: BAYVIEW WELLINGTON SITE: GREEN VALLEY EAST MODEL: S38-19 CITY: BRADFORD	Job Name: S38-19 EL B Level: 2ND FLR FRAMING Label: B23 - i5613 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: Design Passed
---------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------	---------------------------------

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-19**
CITY: **BRADFORD**

Job Name: **S38-19 EL C**
Level: **2ND FLR FRAMING**
Label: **B24 - i5214**
Type: **Beam**

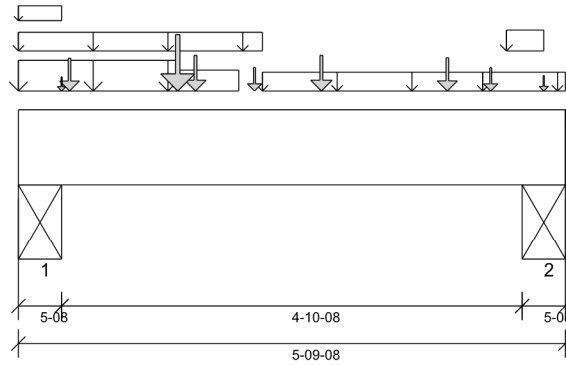
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/06/2022 11:36



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/2"
- 615 psi Beam @ 5'- 5"

PLY TO PLY CONNECTION:
3 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 6" O/C

PLY TO PLY CONNECTION ASSUMES ANY
SUPPORTED BEAM HANGERS ARE FASTENED
TO THIS BEAM WITH MIN. 3.5" FASTENERS.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 1 7/8"	1.25D + 1.5S + L	1.00	3620 lb ft	23299 lb ft	Passed - 16%
Factored Shear:	1'- 3"	1.25D + 1.5S + L	1.00	2972 lb	11052 lb	Passed - 27%
Live Load (LL) Pos. Defl.:	2'- 8 13/16"	S + 0.5L		0.012"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 9 5/16"	D + S + 0.5L		0.023"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5S + L	1.00	3783 lb		20020 lb	11839 lb	Passed - 32%
2	5-08	1.25D + 1.5L + S	1.00	2406 lb		20020 lb	11839 lb	Passed - 20%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 9 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	2'- 7"	E49(i4935)	Top	100 lb/ft	-	-	-
Uniform	0'	1'- 8 1/4"	E49(i4935)	Top	96 lb/ft	-	256 lb/ft	-
Uniform	0'	0'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	6 lb/ft	12 lb/ft	-	-
Uniform	1'- 8 1/4"	2'- 4"	E49(i4935)	Top	36 lb/ft	-	110 lb/ft	-
Uniform	2'- 7"	4'- 11"	E92(i5259)	Top	100 lb/ft	-	-	-
Uniform	4'- 11"	5'- 9 1/2"	E91(i5258)	Top	100 lb/ft	-	-	-
Uniform	5'- 2"	5'- 6 3/4"	E91(i5258)	Top	36 lb/ft	-	110 lb/ft	-
Point	0'- 6 1/2"	0'- 6 1/2"	J1(i5215)	Front	151 lb	302 lb	-	-
Point	1'- 10 1/2"	1'- 10 1/2"	J1(i5224)	Front	174 lb	349 lb	-	-
Point	3'- 2 1/2"	3'- 2 1/2"	J1(i5216)	Front	174 lb	349 lb	-	-
Point	4'- 6 1/2"	4'- 6 1/2"	J1(i5227)	Front	156 lb	312 lb	-	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	0 lb	1 lb	-	-
Point	1'- 8 1/4"	1'- 8 1/4"	E49(i4935)	Top	286 lb	-	743 lb	-
Point	2'- 6"	2'- 6"	E49(i4935)	Top	73 lb	-	158 lb	-
Point	5'	5'	E91(i5258)	Top	72 lb	-	154 lb	-
Point	5'- 6 3/4"	5'- 6 3/4"	E91(i5258)	Top	8 lb	-	25 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i3431)	1126 lb	773 lb	1092 lb	-
2	5'- 4"	5'- 9 1/2"	STL BM(i3430)	806 lb	544 lb	535 lb	-


DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

REVIEWED



	BUILDER: BAYVIEW WELLINGTON SITE: GREEN VALLEY EAST MODEL: S38-19 CITY: BRADFORD	Job Name: S38-19 EL C Level: 2ND FLR FRAMING Label: B24 - i5214 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: Design Passed
---------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------	---------------------------------

PLY TO PLY CONNECTION

Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



REVIEWED

Maximum Floor Spans – S2.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
	NI-60	16'-4"	15'-4"	14'-10"	-	16'-9"	15'-9"	15'-3"	-
	NI-80	17'-3"	16'-3"	15'-8"	-	17'-8"	16'-7"	16'-0"	-
11-7/8"	NI-20	17'-0"	16'-0"	15'-6"	-	17'-6"	16'-7"	16'-0"	-
	NI-40x	18'-2"	17'-1"	16'-6"	-	18'-9"	17'-6"	16'-11"	-
	NI-60	18'-5"	17'-3"	16'-8"	-	19'-0"	17'-8"	17'-1"	-
	NI-80	19'-9"	18'-3"	17'-7"	-	20'-4"	18'-10"	18'-0"	-
	NI-90	20'-2"	18'-8"	17'-10"	-	20'-9"	19'-2"	18'-4"	-
14"	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
	NI-60	20'-6"	18'-11"	18'-2"	-	21'-2"	19'-8"	18'-9"	-
	NI-80	21'-11"	20'-3"	19'-4"	-	22'-7"	20'-11"	20'-0"	-
	NI-90	22'-5"	20'-8"	19'-9"	-	23'-0"	21'-4"	20'-4"	-
16"	NI-60	22'-4"	20'-8"	19'-9"	-	23'-1"	21'-5"	20'-6"	-
	NI-80	23'-11"	22'-1"	21'-1"	-	24'-8"	22'-10"	21'-9"	-
	NI-90	24'-5"	22'-6"	21'-6"	-	25'-1"	23'-2"	22'-2"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-
	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-
	NI-60	18'-2"	17'-1"	16'-4"	-	18'-8"	17'-4"	16'-4"	-
	NI-80	19'-5"	18'-0"	17'-5"	-	19'-10"	18'-5"	17'-8"	-
11-7/8"	NI-20	19'-7"	18'-2"	17'-3"	-	19'-11"	18'-3"	17'-3"	-
	NI-40x	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-2"	-
	NI-60	21'-4"	19'-9"	18'-11"	-	21'-11"	20'-5"	19'-6"	-
	NI-80	22'-9"	21'-1"	20'-2"	-	23'-3"	21'-8"	20'-8"	-
	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	21'-0"	-
14"	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	21'-8"	-
	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
	NI-80	25'-7"	23'-9"	22'-7"	-	26'-2"	24'-4"	23'-3"	-
	NI-90	26'-1"	24'-2"	23'-0"	-	26'-8"	24'-9"	23'-7"	-
16"	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
	NI-80	28'-2"	26'-1"	24'-10"	-	28'-10"	26'-9"	25'-6"	-
	NI-90	28'-8"	26'-6"	25'-3"	-	29'-3"	27'-2"	25'-11"	-

Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

Maximum Floor Spans – S4.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-11"	15'-0"	14'-6"	13'-5"	16'-5"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-7"	16'-7"	16'-0"	15'-4"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-11"	16'-11"	16'-3"	15'-8"	18'-7"	17'-5"	16'-10"	16'-2"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-7"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-6"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-80	21'-1"	19'-6"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90	21'-6"	19'-10"	18'-11"	17'-11"	22'-0"	20'-4"	19'-5"	18'-4"
14"	NI-40x	21'-5"	19'-11"	18'-11"	18'-0"	22'-1"	20'-7"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-3"	22'-6"	20'-10"	19'-11"	18'-10"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90	23'-10"	22'-1"	21'-0"	19'-10"	24'-5"	22'-7"	21'-6"	20'-4"
16"	NI-60	23'-9"	22'-0"	21'-0"	19'-10"	24'-6"	22'-9"	21'-8"	20'-7"
	NI-80	25'-6"	23'-7"	22'-5"	21'-2"	26'-2"	24'-3"	23'-1"	21'-10"
	NI-90	26'-0"	24'-0"	22'-10"	21'-6"	26'-7"	24'-8"	23'-5"	22'-2"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-60	22'-1"	20'-7"	19'-8"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-0"
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-7"
14"	NI-40x	24'-5"	22'-9"	21'-9"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
16"	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"

Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

Maximum Floor Spans – S6.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued Canadian softwood plywood

Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	14'-11"	14'-1"	13'-7"	-	15'-4"	14'-6"	14'-1"	-
	NI-40x	15'-11"	15'-0"	14'-6"	-	16'-4"	15'-5"	14'-11"	-
	NI-60	16'-1"	15'-2"	14'-8"	-	16'-6"	15'-7"	15'-1"	-
	NI-80	17'-1"	16'-1"	15'-6"	-	17'-5"	16'-5"	15'-10"	-
11-7/8"	NI-20	16'-9"	15'-10"	15'-4"	-	17'-4"	16'-4"	15'-10"	-
	NI-40x	17'-10"	16'-10"	16'-3"	-	18'-6"	17'-4"	16'-9"	-
	NI-60	18'-1"	17'-0"	16'-5"	-	18'-9"	17'-6"	16'-11"	-
	NI-80	19'-6"	18'-0"	17'-4"	-	20'-1"	18'-7"	17'-9"	-
	NI-90	19'-11"	18'-4"	17'-8"	-	20'-5"	18'-11"	18'-1"	-
14"	NI-40x	19'-10"	18'-4"	17'-8"	-	20'-6"	19'-1"	18'-3"	-
	NI-60	20'-2"	18'-8"	17'-11"	-	20'-10"	19'-4"	18'-6"	-
	NI-80	21'-8"	20'-0"	19'-1"	-	22'-4"	20'-8"	19'-9"	-
	NI-90	22'-1"	20'-5"	19'-6"	-	22'-9"	21'-0"	20'-1"	-
16"	NI-60	22'-0"	20'-4"	19'-6"	-	22'-9"	21'-1"	20'-2"	-
	NI-80	23'-7"	21'-10"	20'-10"	-	24'-4"	22'-6"	21'-6"	-
	NI-90	24'-1"	22'-2"	21'-2"	-	24'-9"	22'-11"	21'-10"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-6"	15'-1"	14'-3"	-	16'-6"	15'-1"	14'-3"	-
	NI-40x	17'-9"	16'-10"	15'-11"	-	18'-2"	16'-11"	15'-11"	-
	NI-60	17'-11"	16'-11"	16'-2"	-	18'-5"	17'-2"	16'-2"	-
	NI-80	19'-3"	17'-10"	17'-3"	-	19'-8"	18'-3"	17'-7"	-
11-7/8"	NI-20	19'-4"	18'-0"	17'-1"	-	19'-9"	18'-1"	17'-1"	-
	NI-40x	20'-10"	19'-4"	18'-6"	-	21'-5"	19'-11"	19'-0"	-
	NI-60	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-3"	-
	NI-80	22'-6"	20'-10"	19'-11"	-	23'-1"	21'-5"	20'-5"	-
	NI-90	23'-0"	21'-3"	20'-4"	-	23'-6"	21'-10"	20'-10"	-
14"	NI-40x	23'-5"	21'-8"	20'-9"	-	24'-0"	22'-5"	21'-5"	-
	NI-60	23'-9"	22'-0"	21'-0"	-	24'-5"	22'-8"	21'-8"	-
	NI-80	25'-4"	23'-6"	22'-5"	-	25'-11"	24'-1"	23'-0"	-
	NI-90	25'-10"	23'-11"	22'-9"	-	26'-5"	24'-6"	23'-4"	-
16"	NI-60	26'-2"	24'-3"	23'-2"	-	26'-11"	25'-0"	23'-11"	-
	NI-80	27'-11"	25'-10"	24'-7"	-	28'-7"	26'-6"	25'-3"	-
	NI-90	28'-5"	26'-3"	25'-0"	-	29'-0"	26'-11"	25'-8"	-

Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

Maximum Floor Spans – S7.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued Canadian softwood plywood

Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	15'-1"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"	17'-6"	16'-6"	15'-11"	15'-3"
	NI-80	18'-1"	17'-0"	16'-4"	15'-8"	18'-7"	17'-4"	16'-8"	16'-0"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-7"	18'-5"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-3"	17'-10"	17'-2"	16'-6"	19'-10"	18'-5"	17'-8"	16'-11"
	NI-60	19'-6"	18'-1"	17'-4"	16'-8"	20'-1"	18'-8"	17'-10"	17'-1"
	NI-80	20'-11"	19'-4"	18'-5"	17'-7"	21'-5"	19'-10"	18'-11"	17'-11"
	NI-90	21'-4"	19'-9"	18'-9"	17'-10"	21'-10"	20'-3"	19'-3"	18'-3"
14"	NI-40x	21'-4"	19'-9"	18'-10"	17'-11"	22'-0"	20'-5"	19'-6"	18'-6"
	NI-60	21'-8"	20'-1"	19'-2"	18'-2"	22'-4"	20'-9"	19'-9"	18'-9"
	NI-80	23'-3"	21'-6"	20'-5"	19'-4"	23'-10"	22'-1"	21'-0"	19'-11"
	NI-90	23'-9"	21'-11"	20'-10"	19'-8"	24'-3"	22'-6"	21'-5"	20'-3"
16"	NI-60	23'-7"	21'-10"	20'-10"	19'-9"	24'-4"	22'-7"	21'-7"	20'-5"
	NI-80	25'-4"	23'-5"	22'-3"	21'-1"	26'-0"	24'-1"	22'-11"	21'-8"
	NI-90	25'-10"	23'-10"	22'-8"	21'-5"	26'-5"	24'-6"	23'-4"	22'-0"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-7"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-10"	17'-6"	16'-6"	15'-5"	19'-1"	17'-6"	16'-6"	15'-5"
	NI-80	20'-2"	18'-9"	17'-11"	16'-10"	20'-7"	19'-2"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-9"	20'-3"	19'-4"	17'-8"	22'-4"	20'-5"	19'-4"	17'-8"
	NI-60	22'-0"	20'-6"	19'-7"	18'-4"	22'-7"	20'-10"	19'-8"	18'-4"
	NI-80	23'-6"	21'-10"	20'-10"	19'-9"	24'-0"	22'-5"	21'-4"	20'-0"
	NI-90	24'-0"	22'-4"	21'-3"	20'-1"	24'-6"	22'-10"	21'-9"	20'-7"
14"	NI-40x	24'-4"	22'-8"	21'-8"	19'-5"	25'-0"	23'-2"	21'-9"	19'-5"
	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10"
	NI-80	26'-5"	24'-6"	23'-4"	22'-1"	27'-0"	25'-2"	24'-0"	22'-8"
	NI-90	26'-11"	25'-0"	23'-10"	22'-6"	27'-5"	25'-7"	24'-5"	23'-1"
16"	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
	NI-80	29'-0"	26'-11"	25'-8"	24'-3"	29'-7"	27'-7"	26'-4"	24'-11"
	NI-90	29'-6"	27'-5"	26'-1"	24'-8"	30'-1"	28'-1"	26'-9"	25'-4"

Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

Maximum Floor Spans – M2.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
	NI-60	16'-4"	15'-4"	14'-10"	-	16'-9"	15'-9"	15'-3"	-
	NI-80	17'-3"	16'-3"	15'-8"	-	17'-8"	16'-7"	16'-0"	-
11-7/8"	NI-20	17'-0"	16'-0"	15'-6"	-	17'-6"	16'-7"	16'-0"	-
	NI-40x	18'-2"	17'-1"	16'-6"	-	18'-9"	17'-6"	16'-11"	-
	NI-60	18'-5"	17'-3"	16'-8"	-	19'-0"	17'-8"	17'-1"	-
	NI-80	19'-9"	18'-3"	17'-7"	-	20'-4"	18'-10"	18'-0"	-
	NI-90	20'-2"	18'-8"	17'-10"	-	20'-9"	19'-2"	18'-4"	-
14"	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
	NI-60	20'-6"	18'-11"	18'-2"	-	21'-2"	19'-8"	18'-9"	-
	NI-80	21'-11"	20'-3"	19'-4"	-	22'-7"	20'-11"	20'-0"	-
	NI-90	22'-5"	20'-8"	19'-9"	-	23'-0"	21'-4"	20'-4"	-
16"	NI-60	22'-4"	20'-8"	19'-9"	-	23'-1"	21'-5"	20'-6"	-
	NI-80	23'-11"	22'-1"	21'-1"	-	24'-8"	22'-10"	21'-9"	-
	NI-90	24'-5"	22'-6"	21'-6"	-	25'-1"	23'-2"	22'-2"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-
	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-
	NI-60	18'-2"	17'-1"	16'-4"	-	18'-8"	17'-4"	16'-4"	-
	NI-80	19'-5"	18'-0"	17'-5"	-	19'-10"	18'-5"	17'-8"	-
11-7/8"	NI-20	19'-7"	18'-2"	17'-3"	-	19'-11"	18'-3"	17'-3"	-
	NI-40x	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-0"	-
	NI-60	21'-4"	19'-9"	18'-11"	-	21'-11"	20'-5"	19'-6"	-
	NI-80	22'-9"	21'-1"	20'-2"	-	23'-3"	21'-8"	20'-8"	-
	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	21'-0"	-
14"	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	20'-11"	-
	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
	NI-80	25'-7"	23'-9"	22'-7"	-	26'-2"	24'-4"	23'-3"	-
	NI-90	26'-1"	24'-2"	23'-0"	-	26'-8"	24'-9"	23'-7"	-
16"	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
	NI-80	28'-2"	26'-1"	24'-10"	-	28'-10"	26'-9"	25'-6"	-
	NI-90	28'-8"	26'-6"	25'-3"	-	29'-3"	27'-2"	25'-11"	-

Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

Maximum Floor Spans – M4.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-11"	15'-0"	14'-6"	13'-5"	16'-5"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	14'-11"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-7"	16'-7"	16'-0"	15'-4"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-11"	16'-11"	16'-3"	15'-8"	18'-7"	17'-5"	16'-10"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-7"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-6"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-80	21'-1"	19'-6"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90	21'-6"	19'-10"	18'-11"	17'-11"	22'-0"	20'-4"	19'-5"	18'-4"
14"	NI-40x	21'-5"	19'-11"	18'-11"	18'-0"	22'-1"	20'-7"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-3"	22'-6"	20'-10"	19'-11"	18'-10"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90	23'-10"	22'-1"	21'-0"	19'-10"	24'-5"	22'-7"	21'-6"	20'-4"
16"	NI-60	23'-9"	22'-0"	21'-0"	19'-10"	24'-6"	22'-9"	21'-8"	20'-7"
	NI-80	25'-6"	23'-7"	22'-5"	21'-2"	26'-2"	24'-3"	23'-1"	21'-10"
	NI-90	26'-0"	24'-0"	22'-10"	21'-6"	26'-7"	24'-8"	23'-5"	22'-2"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-1"	20'-1"	18'-5"	17'-5"	16'-1"
	NI-40x	21'-10"	20'-4"	19'-0"	17'-0"	22'-5"	20'-6"	19'-0"	17'-0"
	NI-60	22'-1"	20'-7"	19'-8"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-0"
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-7"
14"	NI-40x	24'-5"	22'-9"	20'-11"	18'-8"	25'-1"	22'-11"	20'-11"	18'-8"
	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
16"	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"

Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

Maximum Floor Spans – M6.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued Canadian softwood plywood

Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	14'-11"	14'-1"	13'-7"	-	15'-4"	14'-6"	14'-1"	-
	NI-40x	15'-11"	15'-0"	14'-6"	-	16'-4"	15'-5"	14'-11"	-
	NI-60	16'-1"	15'-2"	14'-8"	-	16'-6"	15'-7"	15'-1"	-
	NI-80	17'-1"	16'-1"	15'-6"	-	17'-5"	16'-5"	15'-10"	-
11-7/8"	NI-20	16'-9"	15'-10"	15'-4"	-	17'-4"	16'-4"	15'-10"	-
	NI-40x	17'-10"	16'-10"	16'-3"	-	18'-6"	17'-4"	16'-9"	-
	NI-60	18'-1"	17'-0"	16'-5"	-	18'-9"	17'-6"	16'-11"	-
	NI-80	19'-6"	18'-0"	17'-4"	-	20'-1"	18'-7"	17'-9"	-
	NI-90	19'-11"	18'-4"	17'-8"	-	20'-5"	18'-11"	18'-1"	-
14"	NI-40x	19'-10"	18'-4"	17'-8"	-	20'-6"	19'-1"	18'-3"	-
	NI-60	20'-2"	18'-8"	17'-11"	-	20'-10"	19'-4"	18'-6"	-
	NI-80	21'-8"	20'-0"	19'-1"	-	22'-4"	20'-8"	19'-9"	-
	NI-90	22'-1"	20'-5"	19'-6"	-	22'-9"	21'-0"	20'-1"	-
16"	NI-60	22'-0"	20'-4"	19'-6"	-	22'-9"	21'-1"	20'-2"	-
	NI-80	23'-7"	21'-10"	20'-10"	-	24'-4"	22'-6"	21'-6"	-
	NI-90	24'-1"	22'-2"	21'-2"	-	24'-9"	22'-11"	21'-10"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-6"	15'-1"	14'-3"	-	16'-6"	15'-1"	14'-3"	-
	NI-40x	17'-9"	16'-10"	15'-11"	-	18'-2"	16'-11"	15'-11"	-
	NI-60	17'-11"	16'-11"	16'-2"	-	18'-5"	17'-2"	16'-2"	-
	NI-80	19'-3"	17'-10"	17'-3"	-	19'-8"	18'-3"	17'-7"	-
11-7/8"	NI-20	19'-4"	18'-0"	17'-1"	-	19'-9"	18'-1"	17'-1"	-
	NI-40x	20'-10"	19'-4"	18'-6"	-	21'-5"	19'-11"	19'-0"	-
	NI-60	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-3"	-
	NI-80	22'-6"	20'-10"	19'-11"	-	23'-1"	21'-5"	20'-5"	-
	NI-90	23'-0"	21'-3"	20'-4"	-	23'-6"	21'-10"	20'-10"	-
14"	NI-40x	23'-5"	21'-8"	20'-9"	-	24'-0"	22'-5"	20'-11"	-
	NI-60	23'-9"	22'-0"	21'-0"	-	24'-5"	22'-8"	21'-8"	-
	NI-80	25'-4"	23'-6"	22'-5"	-	25'-11"	24'-1"	23'-0"	-
	NI-90	25'-10"	23'-11"	22'-9"	-	26'-5"	24'-6"	23'-4"	-
16"	NI-60	26'-2"	24'-3"	23'-2"	-	26'-11"	25'-0"	23'-11"	-
	NI-80	27'-11"	25'-10"	24'-7"	-	28'-7"	26'-6"	25'-3"	-
	NI-90	28'-5"	26'-3"	25'-0"	-	29'-0"	26'-11"	25'-8"	-

Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

Maximum Floor Spans – M7.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued Canadian softwood plywood

Maximum Floor Spans

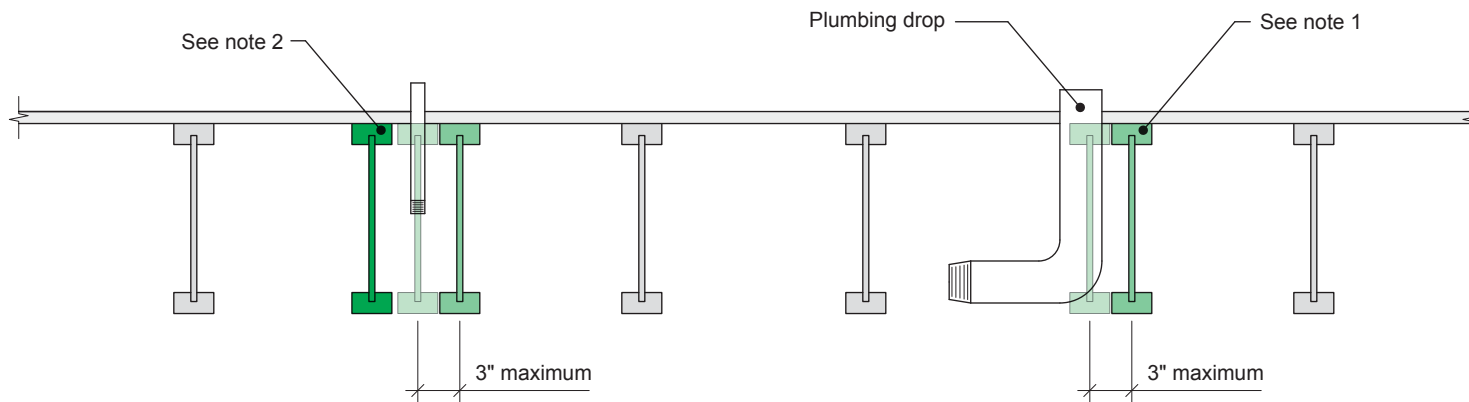
Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"	17'-6"	16'-6"	15'-11"	15'-3"
	NI-80	18'-1"	17'-0"	16'-4"	15'-8"	18'-7"	17'-4"	16'-8"	16'-0"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-7"	18'-5"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-3"	17'-10"	17'-2"	16'-6"	19'-10"	18'-5"	17'-8"	16'-11"
	NI-60	19'-6"	18'-1"	17'-4"	16'-8"	20'-1"	18'-8"	17'-10"	17'-1"
	NI-80	20'-11"	19'-4"	18'-5"	17'-7"	21'-5"	19'-10"	18'-11"	17'-11"
	NI-90	21'-4"	19'-9"	18'-9"	17'-10"	21'-10"	20'-3"	19'-3"	18'-3"
14"	NI-40x	21'-4"	19'-9"	18'-10"	17'-11"	22'-0"	20'-5"	19'-6"	18'-6"
	NI-60	21'-8"	20'-1"	19'-2"	18'-2"	22'-4"	20'-9"	19'-9"	18'-9"
	NI-80	23'-3"	21'-6"	20'-5"	19'-4"	23'-10"	22'-1"	21'-0"	19'-11"
	NI-90	23'-9"	21'-11"	20'-10"	19'-8"	24'-3"	22'-6"	21'-5"	20'-3"
16"	NI-60	23'-7"	21'-10"	20'-10"	19'-9"	24'-4"	22'-7"	21'-7"	20'-5"
	NI-80	25'-4"	23'-5"	22'-3"	21'-1"	26'-0"	24'-1"	22'-11"	21'-8"
	NI-90	25'-10"	23'-10"	22'-8"	21'-5"	26'-5"	24'-6"	23'-4"	22'-0"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-7"	17'-2"	16'-3"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11"
	NI-60	18'-10"	17'-6"	16'-6"	15'-5"	19'-1"	17'-6"	16'-6"	15'-5"
	NI-80	20'-2"	18'-9"	17'-11"	16'-10"	20'-7"	19'-2"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-1"	20'-1"	18'-5"	17'-5"	16'-1"
	NI-40x	21'-9"	20'-3"	19'-0"	17'-0"	22'-4"	20'-5"	19'-0"	17'-0"
	NI-60	22'-0"	20'-6"	19'-7"	18'-4"	22'-7"	20'-10"	19'-8"	18'-4"
	NI-80	23'-6"	21'-10"	20'-10"	19'-9"	24'-0"	22'-5"	21'-4"	20'-0"
	NI-90	24'-0"	22'-4"	21'-3"	20'-1"	24'-6"	22'-10"	21'-9"	20'-7"
14"	NI-40x	24'-4"	22'-8"	20'-11"	18'-8"	25'-0"	22'-11"	20'-11"	18'-8"
	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10"
	NI-80	26'-5"	24'-6"	23'-4"	22'-1"	27'-0"	25'-2"	24'-0"	22'-8"
	NI-90	26'-11"	25'-0"	23'-10"	22'-6"	27'-5"	25'-7"	24'-5"	23'-1"
16"	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
	NI-80	29'-0"	26'-11"	25'-8"	24'-3"	29'-7"	27'-7"	26'-4"	24'-11"
	NI-90	29'-6"	27'-5"	26'-1"	24'-8"	30'-1"	28'-1"	26'-9"	25'-4"

Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

7c



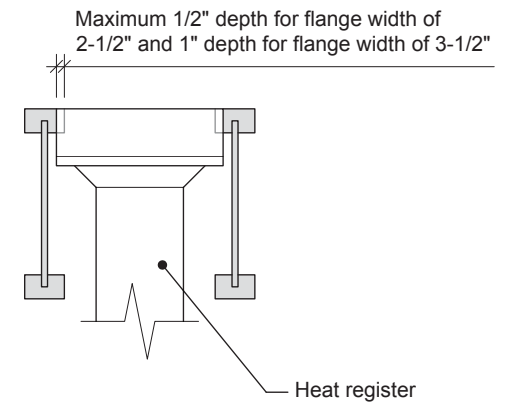
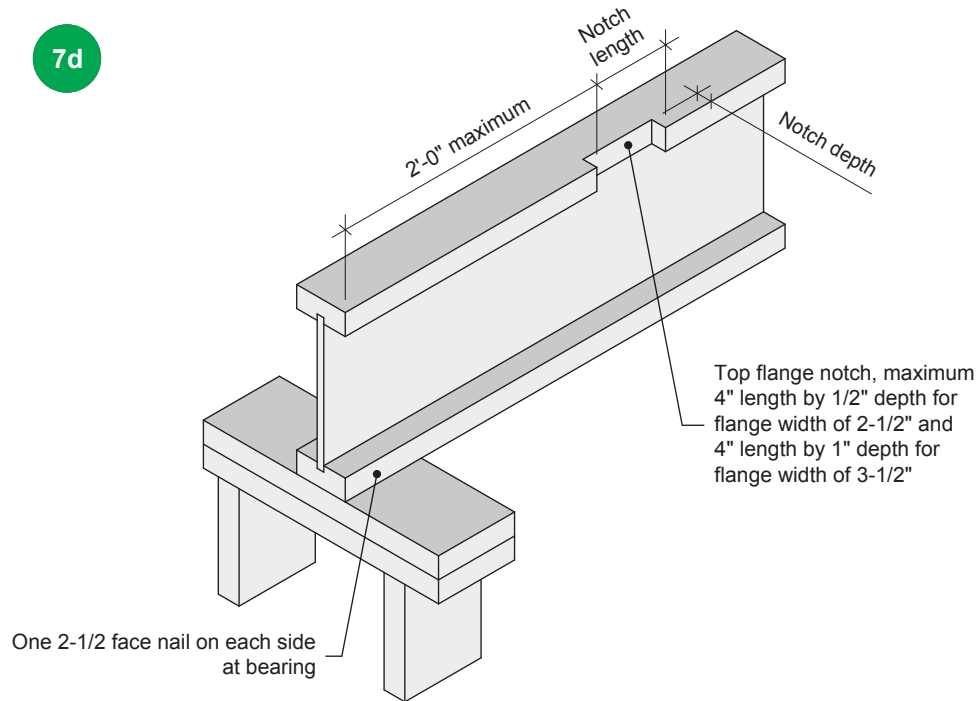
REVIEWED

Notes:

1. To prevent interference with plumbing, a joist may be shifted up to 3 inches if the edge of the floor panel is supported and the span rating is not exceeded.
2. In all other cases, an additional joist is required.

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

7d



Notes:

1. Blocking required at bearing for lateral support, not shown for clarity.
2. The maximum dimensions for a notch on the side of the top flange are 4-inch length by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch length by 1-inch depth for flange width of 3-1/2 inches.
3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
4. For other applications, contact Nordic Structures.

REVIEWED

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.